The Builder.

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Goodwyns Place, Dorking ..... Messrs. Balfour & Turner, Architects.
"Allangate," Rustington, Sussex ..... Mr. R. Heywood Haslam, Architect.
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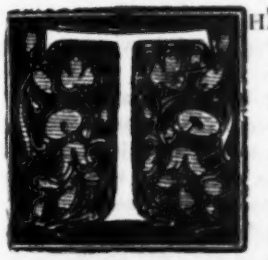
Rhodes in 1902.



THACKERAY, in his quaint little book, "A Voyage from Cornhill to Grand Cairo," was probably one of the first Englishmen to describe the wonderful old city of the knights as it stood in all its remarkable preservation about the middle of the nineteenth century. He gives an enthusiastic account of the ancient fortifications, but little altered from their condition when abandoned by the Christians in the fifteenth century, and above all he pictures the old houses of the knights, with the coats of arms upon their fronts still untouched after so many years of Turkish occupation.

In more recent times, Sir Charles Newton published a volume of travels in the Levant, which contains many very beautiful etchings of the mediæval remains of Rhodes. In one or two instances these are especially valuable in consequence of the destruction now going on or imminent.

At the present time the city still presents a marvellous picture of the middle ages. The curious moles or piers project into the invariably calm waters of the Gulf of Satalia, forming two great harbours or ports where the more or less piratical war-galleys of the knights once found a refuge. These piers, which are part of the original fortifications, are well preserved, and still crowned with curious rows of windmills in the same way as they are represented in woodcuts of Rhodes of the fifteenth century.

Even at the present day considerable evidences remain of the famous siege of 1522. On the seaward walls one of the great towers lies a mass of ruins as it was battered down by the Turkish cannon. Over the interesting port gate, between the flanking round towers, still stand in a large canopied niche of white marble the decapitated statues of three saints. Everywhere, ruins naturally meet the eye, but with the exception of a slight modification to the fortifications to accommodate a comparatively modern saluting battery, the city has been marvellously let alone until the present time. Now, however, that singular spirit of energy which seems developing all over the once dormant Turkish Empire, is also making itself felt in Rhodes. For the last two or three centuries the island has been only a sort of penal settlement, or, at least, a place of exile for political prisoners, in the way that many old fortresses have been used. Now the spirit of alteration is abroad, and, amongst other things, a new street is being ruthlessly driven through the ruins of the great church of St. John, and many new villas and houses are springing up in the suburbs.

On November 6, 1856, the church of St. John, which stood at the top of the Rue des Chevaliers, and formed a part of the interesting group of mediæval houses, was destroyed in the blowing-up of a powder-magazine by lightning which had been established in the crypt. This church is very fully described by M. de Vogüe ("Eglises de la Terre Sainte," 1854) as he saw it on his way back from the Levant. He describes it as of purely Italian design (dated 1320), with wide nave arches and wooden roofs and ceilings to nave and aisles. Many interesting knightly monuments which survived its conversion into a mosque (like in Cyprus where the churches converted into mosques are still filled with Christian memorials) perished in this explosion. A few of the gravestones were afterwards rescued and carried to Paris by French tourists. They are now in Cluny Museum. Of the other churches of the city mentioned by M. de Vogüe as existing about the middle of the nineteenth century, only one seems to have survived, to some extent, subsequent earthquakes. This is a building close to the port, in which the general outline of a Gothic church, but with the windows filled in with masonry and a much-plastered exterior, serves to represent the church architecture of Rhodes. It may possibly be the St. Catherine, originally built in 1330, mentioned by De Vogüe.

The citadel seems to have been surrounded by three *enceintes*—a general outside city wall around the whole town, with a deep and wide moat, where it is not built on the sea shore or as part of the harbours; an inner line of wall enclosing the residences of the knights; and a third wall which formed, with a portion of the outer *enceinte*, the castle precincts. After the siege of 1481, when the Turks inflicted great damage on the city, and after the terrible earthquake of the succeeding year, the rebuilding of Rhodes consisted chiefly in reducing the outer of these walls to a condition of defence in accordance with the principles of artillery fortification of the early sixteenth century. The main or curtain wall, still crowned with the loopholed battlements and *meurtriere* of an earlier age, was further protected with semicircular towers to contain cannon with a flanking fire upon the walls.

The chief architectural interest of the present day centres in the Rue des Chevaliers and its most interesting collection of small mediæval houses, the priories, auberges, or "commandaries" of the different national subdivisions of the Order. These subdivisions, instituted on the removal of the Order of St. John from Jerusalem to Rhodes at the beginning of the fourteenth century, were eight in number, representing the countries of Provence, Auvergne, France, Italy, Aragon, Castile, Germany, and England. They mark the later development of the Order into a military organisation, but the earlier ideal of the Hospitallers is also represented at Rhodes by the presence of the huge caravanserai or hospital which forms part of the knightly division of the town. Passing up the Rue des Chevaliers from the port gate, this hospital is on the left hand, forming part of one side of the street, the priories are chiefly on the right or north side. At the top of this street stood the church of St. John, backed up by the palace of the Grand Master or citadel. Few vestiges remain of these latter monuments. Many of the priories are still easily identified by the excellently-preserved coats of arms with which their fronts are encrusted. That of France is, perhaps, the most important,

Plan of the Fortress of Rhodes: from Coroncelli (1688).

A. Citadel and Grand Master's House.
B. Rue des Chevaliers.
C. Church of St. John.
D. Church of St. Catherine.
E. Port Gate.
F. Priory of the Holy Spirit.

and on its front are two shields of arms which De Vogüe identifies as representing the architect of the building, Pierre Clouet.

The priory of England is particularly interesting. It stands at the top of the street, on the right hand side, and is easily distinguished by the coat of arms of England, the three lions passant, the cross-keys of an Archbishop of York, and the arms of Cardinal d'Aubusson, who restored the building in 1483. Part of this priory seems to have been a chapel (now a deserted and inaccessible mosque), and the singular little doorway into this chapel at the top of the narrow flight of stone steps built against the side of the street is its chief external feature. Over this doorway is a very remarkable canopy (octagonal), projecting as a kind of hood over the door, with gablets and miniature groining, the whole apparently cut out of one stone. It reminds one of the usual canopy over a figure or niche of the fifteenth century, and looks older than the other work in Rhodes.

By far the finest of these priory buildings is that of "St. Esprit," a French Order which seems to have had a branch establishment in Rhodes independent of the Order of St. John. This is a very picturesque building approached by a platform with a flight of steps. An elegantly designed entrance in the style of François I. leads into a court at one side. The marble lintel with a large angel holding coats of arms, and the door-jambs covered with the curious badge of the Order—a cluster of flames—are singularly well preserved. The square windows of this building, like those of most of the other priories, are formed by a square-cut mullion and transome, so characteristic of French architecture, surrounded by a richly moulded architrave and the usual drip-stone with returned ends. Exquisite scraps of mediæval sculpture in niches and panels enrich the walls of all these buildings.

The ancient "hospital" at Rhodes which seems to have been planned in imitation of the original at Jerusalem is a vast rambling quadrangle, now used partly as barracks, partly as prison. It is, of course, inaccessible and can only be judged of from outside. The entrance is beneath a singular projecting bow window with traceried lights. This part may, however, have been modified in more recent years. In the Rue des Chevaliers is another entrance of an imposing character, now walled up.

The famous old city of Rhodes is still a wondertul survival of a mediæval fortress, although much has disappeared since the days of Thackeray, De Vogüe, and others who described it in the middle of the past century. As has been pointed out, new influences are at work in the old Ottoman Empire, and probably the days of such historical relics are numbered. Like Famagusta in Cyprus or the once numerous castles of crusading times dotted along the Syrian coast, it is doomed to disappear. Many of the coats of arms and inscriptions on the priories have recently been treated in a curious manner — they have been covered with a coat of whitewash which brings out their sculpture in a remarkable manner, although it does not add to their effectiveness as works of art. Such a treatment is, perhaps, supposed to render them more attractive in the eyes of the tourists who land from the passing steamers and leave a few francs behind them amongst the Jewish boatmen of the port. As is everywhere the case in the Turkish Empire of the present day, the priceless and unique antiquities which survive are being turned to a temporary profit by the ignorant, greedy natives, who have discovered that for some unaccountable reason such things attract the attention of the European visitor, who can also be made to pay the inevitable "backshish" for their inspection. Such conditions are often maintained until some change in ownership, or the prospect of better speculative profits, involves a total destruction.

THE LIVERPOOL CATHEDRAL SCHEME.

IT is not surprising that the result of the first competition for the proposed Liverpool Cathedral has excited widespread dissatisfaction, which is now beginning to show itself; and not alone among architects, as is evident from the trenchant letter signed "A Layman" which appeared in Thursday's *Times*.

We were of opinion from the first that the system on which the preliminary competition was instituted was far too vague and indecisive. To allow competitors the option of either sending in special designs for the site, or merely sending illustrations of work already done, as a testimony of their capacity, was putting them on a very uneven basis for comparison. The competition should either have been limited to a sending-in of illustrations of executed work, or it should have been limited to the sending of small sketch designs for the existing site. The latter, as we said from the first, would have been by far the preferable system, and would have been likely to have resulted in a much more important and interesting competition. As it is, there were in the competition no less than three different classes of drawings—(1) those designed for the site; (2) those showing original ideas for a cathedral but not designed for the special site; (3) photographs and drawings showing executed work. In addition to this confusion as to the basis of competition, the committee allowed it to be supposed that everything was to be sent in under the authors' names, a supposition which, to our knowledge, prevented some men from competing who might have produced good designs; for if an architect knew that he was not a *persona grata* in the church building world represented by the committee, it would be foolish of him to waste his time in sending in a design under his own name which would almost certainly be rejected on personal grounds. After it was too late to be of any use, the Committee apparently came to the conclusion that the names should be concealed—we presume from the assessors; at all events they were covered over and the representatives of the Press were asked not to divulge them; but the mischief was done by that time: people who might otherwise have competed had been, as it were, warned off.

The vague and varying conditions of the competition would necessarily add to the difficulty of forming a comparative judgment on them; but at all events the assessors ought to have been made aware of the advertised conditions, and taken them into account; and if these conditions were not put before them, the assessors should have asked for them. We presume they must have been unacquainted with the conditions, since they actually cast a slur, in their Report, on competitors who had in fact done exactly what they were invited to do, at their own choice. Competitors could either send in designs for the cathedral, or illustrations of their executed work; and yet those who chose the latter alternative are twitted in the Report with indolence and indifference, as persons who have "actually taken no trouble." This is well brought in the letter of "A Layman" already referred to; but there is a stronger point in the case which he does not seem to be aware of viz.: that the very first

name in the list of the five selected candidates is that of one of these firms who have "taken no trouble," Messrs. Austin & Paley to wit. They have been in the habit of having fine and effective perspective drawings made of their various churches, and these they wisely exhibited; most of them we remembered quite well, and we do not think that any of them were specially prepared for the occasion. Why then this slur upon competitors who have done just the same?

The moral seems to be that to act as judge in a large competition it is not sufficient to be an eminent architect in the artistic sense of the word, but that a logical habit of mind is required, as well as a wide sympathy, and the faculty to recognise architectural ability and originality apart from any specially favoured style.

From this point of view the Cathedral competition appears to be, so far, a complete failure. The Committee, it must be admitted, laid the foundation of failure in the first instance, by not inviting a regular sketch competition *ad hoc*, with anonymous designs. But the selection from what were sent in is lamentably deficient and one-sided. Only compare some of the names kept out with some of those selected or honourably mentioned. Architects who have built some of our finest recent churches, and who were among the competitors, are shut out even from the cold comfort of "honourable mention." We do not say that all the five selected are not likely to produce good designs, but there are others from whom we should expect it still more confidently. One would like to know also what is the view of permissive originality, on the part of the assessors, which has led them to turn their back on such designs as those numbered 38 and 53 in the competition. If these are included in the condemnation of designs which "had little aim beyond being eccentric for the sake of originality," all one can conclude is that "eccentricity" meant anything at variance with orthodox Gothic. There was nothing "eccentric" in either of these designs; both of them showed a reasonable effort to suggest something specially suitable for the site and for a modern cathedral. No. 38, with its two towers over the nave, was obviously an attempt to produce a design specially suitable to a confined site, where a grouping on a central system could not be seen from any advantageous point of view. There were others worth attention of which we have a less definite recollection; but certainly these two designs merited special recognition, as attempts to evolve a treatment specially suitable to the occasion, and to give a modern version of the cathedral idea. This, however, appears to be exactly what is not wanted; there was a chance for the evolution of a modern cathedral, and both the Committee and their assessors seem to have done their best to prevent any such result.

The Committee may be assured that neither architects nor the public will be satisfied with the present result; and we should recommend them to call in a supplementary assessor or assessors to make such a further selection as will bring the number for the final competition up to twelve, and will give them opportunity to include some of the really original and thoughtful designs which have been passed over.

NOTES.

Coal Production and Export.

IN view of the Pennsylvanian coal strike, and the placing of an order for 50,000 tons of the best English "domestic" coal by the ubiquitous Morgan Syndicate, the much-abused Government has at least something to congratulate itself upon in its action in imposing coal duties on exported coal. The return issued last Saturday of the coal industry of the world in face of the above facts also comes at a very appropriate moment, and it shows that out of the 700,000,000 tons which the whole world produces annually, over the last three years the United Kingdom has produced an average of 221,441,000 tons per annum, and the United States 242,816,000 tons, together amounting to nearly five-sevenths of the whole world's production. In the year 1900 the average value per ton taken at the collieries was, in the United Kingdom, 10s. 9¾d., but in the United States 5s. 3¾d., or less than half that sum, yet the exports from the two countries in the same year were 58,405,000 tons from the United Kingdom, as against only 8,295,000 from the United States, the latter country also importing 1,903,000 tons, whilst the United Kingdom only imported 10,000. The increased export of a necessity of life owing to the natural resources of another country being, so to speak, artificially closed by reason of strikes, is undoubtedly a good thing for those interested in the particular article, but is not desirable for the country at large. Not only will householders here suffer from the strike in America whilst it is in progress, but after its close, owing to the subsequent fall in prices and wages, and the unreasonable attitude of labour, future strikes are almost certain to develope in this country, and the nation at large will suffer. The alleviation secured by the coal tax is a small thing compared to such loss as is caused by inflated prices in coal, but it is something, and possibly future Chancellors of the Exchequer will read the coal returns now made in connexion with the above facts with considerable interest.

Railway Ventilation.

EXPERIMENTS at the Bond-street Station of the Central London Railway have sufficed to show that the fan placed there a few months ago is of little practical use in removing foul air from the subway. The idea was that by vigorous action for a certain space of time during cessation of traffic the tunnels might be thoroughly swept out and furnished with a supply of fresh air to serve passengers for the remainder of the day. Even to achieve so modest an object would certainly have necessitated a much larger fan than could possibly be installed in any station on the line. If all openings between the tunnels could be absolutely closed it might be possible to sweep out the heavy air by the aid of two blowing or exhausting fans, one at the end of each tube, each of diameter equal to that of the tunnel, but a smaller fan would almost certainly have the effect of drawing fresh air along the upper parts of the tunnels, leaving a large proportion of the denser gases at the bottom. In any case, the inadequacy of ventilation performed only once a day must be perfectly clear to all who regard the subject from a rational standpoint. The original proposition that trains moving in opposite directions through two connected tunnels would cause a pump-like action, and would so effect satisfactory ventilation, is now proved to have been entirely fallacious, and the wonder is that it was ever seriously advanced. No engineer in his senses would ever dream of designing a water pump on such lines, and we cannot imagine why it should have been supposed that air could have been so dealt with when the working conditions absolutely precluded success. The only possible manner in which the moving trains could be caused to act like the units of a chain pump would be by permanently closing all openings between the up and down lines, and by providing separate lift wells for the two lines. Probably it would also be necessary to adapt air-tight doors at the ends of each station to ensure the complete expulsion of foul air by an approaching train, and the admission of fresh air by the suction caused by a receding train. Any arrangement of so complete a character could hardly be attempted at the present time owing to the heavy cost and limitation of the train services. We believe the Directors have now decided to adopt a system of ventilation involving the employment of fresh-air ducts, fitted with regulating valves, throughout the whole length of the railway, through which the outer air will be delivered under sufficient pressure to ensure adequate distribution. There is no reason why such a method of ventilation should not be effective, but everything must depend upon the manner in which it is applied, and upon the adequacy of the mechanical plant for the requisite delivery of air.

The Sonning Bridges.

A COPY of *Country Life* has been sent to us containing the proposed design by Mr. Lutyens for rebuilding the Sonning bridges, which was the occasion of a letter from Mr. Holman Hunt in the *Times* the other day, urging the Oxfordshire authorities to accept this design. We fear that *Country Life* and Mr. Lutyens, in their well-intended efforts, have done more harm than good to the cause. Mr. Lutyens's design, which consists of timber framing resting on brick piers 17 ft. 6 in. from centre to centre, rising just above water level, is undoubtedly picturesque, and for a bridge to take a side lane for light traffic would do very well. But the roadway concerned is the high road through Sonning, and to take all traffic which claims a right to come along the high road this design is inadequate, and would not be sufficiently permanent under heavy loads, and we should certainly not counsel a county engineer to accept it for the purpose. Mr. Holman Hunt, who writes to the *Times* in approval of it, is an eminent painter but not a constructor, and regards only the appearance of the thing. Moreover, there is rather an æsthetic defect in the design, in the fact that the main beams and the wooden balustrade on them are treated with a slight curved rise or camber from pier to pier, giving a wavy line to the whole. It is not, we presume, proposed that the surface of the road should follow this line, and in that case the design produces a wrong impression to the eye of the facts of the structure; nor do we think that it is agreeable in itself. We return to what we have before suggested; viz.: that in regard to the character and use of the two arms of the stream concerned the

brick or stone piers might be built closer together than is here proposed, and bridged by a series of strong oak beams, (if necessary sawn and reversed, with an iron flitch between). This would carry everything that would be required, and would leave no junction points where strains under moving loads would in time induce weakness and dislocation; and it would be a picturesque form, resembling in general lines those Welsh and Dartmoor bridges, consisting of straight beams laid across rough stone piers, which are the delight of artists. We are entirely in sympathy with the feeling about the Sonning bridges; we consider that the common form of iron girder would ruin the aspect of the place; but it is unfortunate that those architects and artists who come forward in these cases to propose a better way nearly always contrive to put themselves in the wrong with the engineers, by proposals which neglect practical requirements and conditions.

Richmond Bridge, Surrey.

The rebuilding now in progress of Kew Bridge has prompted a project, which the Town Council of Richmond are about to consider, for rebuilding the bridge at Richmond, which, it is represented, is no longer equal to the requirements of heavy and increasing traffic. In 1773 an Act, 13 Geo. III., c. 83, was obtained for enabling Commissioners to purchase the interest of the lessee in the ferry, which in former days had belonged to the Crown as an appendage of the manor, and to erect a bridge which, as the Act required, was to have a middle arch, with a span of 60 ft., and affording a headway of 25 ft. above low-water mark. The four other arches were to be of such height and breadth as would give a clear passage within the banks of not less than 250 ft. of water—the river at that spot being about 100 yards wide. The bridge, having five semi-circular arches of stone across the tide-way and towing-path, and a line of five brick arches on the Middlesex shore for the relief of flood-water, was begun in August, 1774, and completed in December, 1777, after the designs of James Paine, or Payne (who subsequently erected the bridge at Kew, for Robert Tunstall, proprietor), assisted by Kenton Couse, of the then Board of Works. The total expense of the works amounted to 26,000*l.*, of which sum 25,000*l.* was raised, under powers given by the Act, by a tontine in shares of 100*l.* apiece, at 4 per cent. interest. The Act of 1773 provided for the ultimate extinction of toll-charges; the "Annual Register" for that year records that the owner of the ferry offered to surrender all his rights for a capital payment of 6,000*l.* or an annuity of 200*l.*, and in the former case to subscribe the whole amount towards the building of the bridge. It is to be hoped that if Richmond Bridge is to be rebuilt, an effort will be made to secure that something is produced equal in architectural effect to the present bridge. Otherwise, at the rate things are going on, half the beauty of the Thames will presently be destroyed.

The Influence of Good Roads.

Scarcely a month passes without some indication that Americans are beginning to realise in earnest the difficult problems that must present themselves in any fully-organised country. A notable proof of this statement is to be found in a paper read at the Annual Convention of the Good Roads Convention in Albany, U.S.A. So much do the circumstances therein mentioned resemble those existing in many parts of Great Britain, and particularly in the home counties, that the paper would have been most suitable for any of our own engineering societies. Concern is expressed for the future of rural districts; in twenty-two counties of New York State a decrease in population of over 3½ per cent. has occurred during the past ten years, and the gain has been almost entirely made in cities, five-sixths being actually in New York city, and the author asks that a serious search should be made for the facts governing what he terms the "extremely unsatisfactory movement in our population." His suggestion is that lack of convenient and cheap transportation may be the governing factor, and we quite agree with him. Traffic facilities of the proper kind undoubtedly influence the position of large industries and centres of population, for the high cost of freight over bad roads or badly engineered railways must make manufacture unremunerative and discourage growth of population. Ordinary roads have almost ceased to be of importance to the manufacturer in the United States, and they are of merely local service to traders in this country. To farmers and private residents they are more valuable, and will become much more so when self-propelled vehicles come into general use in country districts, as agriculturists and others will be able to dispose of produce without the delays and excessive rates involved by transport over traffic-glutted railway lines. To suburban districts good roads and rapid means of communication with cities and towns are of the greatest importance, as the business man almost always chooses his place of residence where suitable traffic facilities are to be found. The writer of the paper says that New Jersey is able to show a 30 per cent. increase of population, because macadamised roads were adopted there some thirty years ago, while five counties east of the Hudson, without improved roads, show a net loss in population of rather more than 1 per cent. On the question of electric tramways the author remarks that "a trolley road, obviating the necessity of getting out either a horse or wheel"—the American term for a bicycle—"makes a locality especially attractive to residents and to business people." No doubt this is perfectly true concerning new residents, though a different opinion is entertained by old inhabitants of a district. The view that tramway lines running through country roads will cause population to concentrate along the highways is another commendable theory, and the establishment of such lines would certainly do much towards the more equal distribution of population in England—a consummation that is hoped for by all who have thought seriously on the question.

Fire Insurance.

We have received from Messrs. Effingham Wilson a little pamphlet entitled "How to Insure against Fire," by Mr. C. Spensley, insurance expert. We are not quite sure what the title of "insurance expert" may mean, but the remarks contained in this pamphlet are certainly worthy of notice. There is unquestionably a considerable amount of dissatisfaction among insurers, both commercial and private, against the manner in which insurance companies settle claims, for few can be concluded without something like a conflict, which frequently ends in arbitration between the insurers and the insured. As Mr. Spensley points out, the amount stated in the policy is merely a maximum, and a loss under the policy has to be proved before it can be recovered against the company; consequently, it is to the interest of the company's official to run down the claim as much as possible, and there is no doubt that in many cases amounts are taken from the insurance companies less than are really due, simply because the insured is anxious to obtain his money with as little trouble as possible. Whether the "valued policies" could not become more general seems to be a serious question, so as to prevent the need of any contest when a loss takes place. The cost of depreciating claims is, perhaps, larger than insurance companies suppose. It means that they have to pay officials to reduce claims, whereas these salaries and commissions would be saved could the property which is insured be paid for without dispute. At present the public are much handicapped, because the insurance companies all work together, and the individual who has lost by a fire has practically to fight what is to all intents and purposes an insurance trust.

Offering Commissions to Architects.

Two architects have sent us this week the following extraordinary circular from a manufacturing firm:—

"Dear Sir,—We beg to address you, although with some diffidence, fearing we may be misunderstood, but will explain our position briefly, hoping to enlist your attention.

We are manufacturers of varnishes, colours, and paints of all kinds, as well as oil refiners, and can offer at prices comparable with equal quality far below those current. The difficulty of getting representatives fully alive to the altered conditions of business, and first ascertaining buyers' requirements, compels us to conduct our business by correspondence, and we are willing to give that consideration which would otherwise be given in representatives' expenses in shape of a liberal commission for all business introduced to us.

We beg you will communicate with us on this subject."

The barefaced character of this proposal, coupled with the admitted "diffidence" in making it, is perhaps more calculated to excite amusement than indignation. It is really an invitation to architects to become, in a sense, "travellers" for the firm. One of our correspondents fears that the fact of these proposals continuing to be made to architects is an indication that there are quarters where they are accepted, but we hardly think this is likely; in the present instance we should attribute the sending of such a circular to sheer ignorance rather than to any intention of acting improperly. To people in trade the offer of a commission seems a natural way of getting business, and they cannot understand that professional men are in a totally different position.

Public Improvements, Redcar.—The Redcar Urban District Council have decided to carry out the scheme of their Engineer and Surveyor (Mr. James Howcroft) for improving the promenade, erecting shelters and underground lavatories for ladies and gentlemen, at an estimated cost of 8,000*l.*

THE ARCHITECTURAL ASSOCIATION.

SESSION 1902-3 of the Architectural Association opened on Friday last week in the Meeting-room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., when the President, Mr. H. T. Hare, took the chair.

The Annual Report.

The Committee report that during the fifty-fifth session of the Association, which terminated last May, steady progress has been made. The membership, which has progressively increased during the past eleven years, reached the total of 1,425 at the close of the session. One hundred and two new members were elected, six were reinstated, and the losses by death, resignation, and other causes amounted to thirty-one. The Committee report that the day school has fully realised the anticipations of its founders, and has been attended by fourteen students; eight have completed one year's course and entered offices as articled pupils, and it is hoped that all or nearly all will be joining the second year's course. The holiday work of the students during the Christmas and Easter vacations was very satisfactory, and great credit is due to the master, Mr. Arthur T. Bolton, and to Mr. E. F. Reynolds, the assistant master, both of whom have spared no pains to make the school a success. Several visits have been paid to buildings and also to workshops. The day school has met with most gratifying support from the profession, and the idea of the second year's course has been favourably received. The question of obtaining suitable premises in order to fulfil the requirements of the day and evening schools, library, and offices has continued to engage the attention of the Committee, and, although not yet settled, the matter may be said to have advanced a great step forward by the creation of a special fund for building. The donations and promises for this purpose amounted at the close of the session to 4,285*l.* This amount might not justify the Committee in embarking on a building scheme at present, but it went some way in that direction. The Association owes a debt of gratitude to Mr. W. H. Seth-Smith (past President) for his indefatigable efforts to obtain donations towards the new premises fund. The office, library, and common-room have been improved by the installation of electric light, but the work of both library and offices has been much hampered on account of the cramped accommodation. The Committee has taken over the management of the "A.A. Sketch Book," and it is hoped that the list of subscribers to this publication will increase considerably. Messrs. W. G. B. Lewis and W. A. Pite have continued to act as editors. The Council of the Royal Institute of British Architects has arranged that all drawings submitted in competition for the Institute prizes will be considered available for illustration in the "A.A. Sketch Book" or "Architectural Association Notes," unless the author lodges an objection with the Institute within fourteen days of the publication of the award. "Architectural Association Notes" has been ably edited by Mr. Herbert A. Satchell, with Mr. Francis Hooper as assistant editor. The cordial thanks of members are due to Mr. G. H. Fellowes Prynne, who had to relinquish the post of editor owing to pressure of professional work. The library has been largely used by members. A separate library has been provided for the day-school students, and this has proved very useful. One hundred and ninety-eight individual students attended the studio and evening-classes. Although the numbers showed a slight falling-off compared with previous sessions, the results attained were very satisfactory. The Classes of Design have again proved of great service to members, and the results of the session's work compares very favourably with previous years. The best thanks of the Association are due to the Visitors, who devoted much valuable time to the consideration of the designs submitted, and for their criticisms at the meetings of the classes.

The minutes of the last meeting having been read and confirmed,

The Chairman proposed a hearty vote of thanks to the Royal Institute of British Architects for its eleventh annual grant of 100*l.* towards the educational scheme of the Association.

The motion having been heartily agreed to,

The Chairman proposed a vote of thanks to Mr. H. Wilson for presenting to the library a portfolio of drawings, designs, and sketches by the late John Sedding. He was sure the gift would be very much appreciated by every member of the Association. Mr. Sedding's work was known and appreciated by all the members, and any work of his, and any sketches, must be of great interest and value, both as a record and as a reference.

The motion having been agreed to, the following gentlemen were elected members of the Association:—Messrs. A. Bough, C. J. Graham, and J. R. Sanders. Fifty-nine gentlemen were nominated for election at the next meeting.

Mr. R. S. Balfour, Hon. Secretary, announced the following donations to the library:—"Architecture and Ornament of the Renaissance and other Periods in Italy," presented by Mr. A. J. Meacher; "Picturesque Westminster," presented by Mr. Walter Emden; "Orders of Architecture" and "Architectural Drawing," presented by Mr. R. Phene Spiers; the Banister Fletcher Bursary Report, and "Drawings of Wren's Dormitories," presented by Mr. Arthur Stratton; "Designing Ironwork," presented by Professor H. Adams; "Shoring and Underpinning," by Mr. Stock, and "Elementary Building Construction," by Mr. C. F. Mitchell, presented by Mr. B. T. Batsford.

A vote of thanks having been accorded to the donors,

Mr. Balfour announced that certain classes of the Association would shortly commence.

He also announced that the first meeting of the Discussion Section would be held on October 15, when Mr. N. F. Barwell will read a paper entitled, "Some Recent Theories Concerning Saxon and Early Norman Work in England."

The Chairman then proposed a hearty vote of thanks to the Bath Stone Firms for the hospitality extended to the Association in conducting the members of the party over the Portland Quarries recently.* The party had a very pleasant day, and they felt indebted to the Bath Stone Firms collectively, and to Mr. Turner and Mr. Sansom individually.

The vote of thanks was heartily agreed to.

Prizes and Studentships.

The Chairman then delivered the prizes and studentships for Session 1901-02 as follows:—

A.A. Travelling Studentship, value 25l., and Silver Medal.—L. G. Detmar.

Second Prize, value 5l.—G. S. Nicol.

A.A. Medal, value 10l. 10s.—Not awarded.

Banister Fletcher Bursary, value 25 Guineas, and Medal.—A. E. Richardson.

Andrew Oliver Prize, value 3l. 3s.—W. J. M. Thomasson.

Second Prize, value 2l. 2s.—H. Kenchington.

A.A. Scholarship, value 4l. 4s. — W. A. Hodges.

Banister Bursary Medal gained in 1900.—A. Stratton.

Studio: Division I.—J. F. Schneider, drawings of old work, prize value 10s. 6d.; H. L. Samson, study of ornament, prize value 10s. 6d.; H. L. Samson, construction, prize value 10s. 6d.

Studio: Division II.—I. S. Davies, design, prize value 10s. 6d.; A. E. Bullock, time sketches, prize value 10s. 6d.; A. E. Bullock, study of ornament, prize value 10s. 6d.; A. E. Bullock, construction, prize value 10s. 6d.; H. L. Samson, perspective, prize value 10s. 6d.

Elementary Class of Design.—H. L. Samson, prize value 3l. 3s. and bronze medal; E. G. Stevenson, H. Hyams, certificates.

Advanced Class of Design.—E. Gunn, prize value 5l. 5s., bronze medal, and pass for modelling class; E. G. Theakston, certificate and pass for modelling class; L. Lee, A. G. Scott, J. N. R. Vining, passes for modelling class.

ORDER OF MERIT: *Lectures. Division I.*

Greek and Roman Orders.—E. G. Stevenson, book prize.

Elementary Construction.—W. A. Hodges, book prize.

English Architecture.—C. J. Goodwin, book prize.

Mediæval and Renaissance.—W. A. Hodges, book prize.

Elementary Physics, Formulæ and Calculations.—R. E. Stewardson, book prize.

Plane and Solid Geometry.—S. T. Hennell, book prize.

Lectures. Division II.

Materials, their Nature and Application.—R. J. Tyndall, book prize.

Construction.—G. Church, book prize.

Drainage and Water Supply.—D. Anderson, book prize.

Ventilation, Lighting, and Heating.—G. M. Page, book prize.

Mensuration, Land Surveying, and Levelling.—D. Anderson, book prize.

President's Address.

The Chairman then delivered the following address:—

Fellow Members and Students of the Architectural Association.

The first official duty your President is called upon to perform, that of addressing you at the opening of the session, is probably the most difficult and onerous of the many tasks which fall to his lot during his term of office. Time-honoured precedent, however, makes it impossible for him to avoid the duty, however much he might desire to do so, and it is a privilege not to be lightly set on one side. I therefore take up the burden, not so much in the hope that I may be able to say anything which has not been often and better said by my predecessors in the chair, but rather that I may give the necessary opening to what promises to be one of the most successful and important sessions which the Association has seen. What diffidence I may feel is dispelled by the testimony of your presence here to-night, which witnesses to the fact that this annual address is no mere formality. The responsibility, however, increases yearly, and expands as the work grows, and our interest in an engaging and delightful calling makes it well that we should thus annually meet to take stock, as it were, of our position; to review not only the past year, but the years which have gone beyond recall; to see how we stand, to look ahead into the future years, with whatever they may bring us; and, while taking counsel with each other, to encourage ourselves for the great and far-reaching object we have in hand, viz., the advancement of architecture, both as an art and a science.

About fifty-five years ago the Architectural Association, which was then in formation, met in a coffee-house; afterwards in Lyons Inn Hall. The same burning zeal which inspired the founders is, I truly believe, still with us—the flame has in no way become dim; some of the founders are even still with us to-day, among them the venerable and esteemed Professor Kerr. From then till now is over an average lifetime, and the Association is now a full-grown and vigorous body, meeting, by the courtesy of the Royal Institute of British Architects, in this their meeting room, our proceedings fully reported in an admirable professional Press, and possessing a representative journal of its own production, not devoid, I venture to think, of literary merit.

We cordially welcome here to-night many old friends, while a still vaster number continue on our rolls whose sympathy and support are essential to our well-being and progress. Their sons and successors are with us, working with a full and free hand, while, it may be, their grandsons are now in the Student Corps which our roll encloses. The Architectural Association is truly vernal. If you would renew your youth, I know of nothing likely to be so invigorating and stimulating as your attendance at one of our annual gatherings.

The labours of the Association have ever been of a self-denying character. In early days, and until within quite recent years, when the new educational move was inaugurated by my distinguished predecessor in the chair, Leonard Stokes, the work of the Association was carried on by mutual self-help of an entirely honorary character. The services thus rendered gratuitously were of a high and valuable order, and many of us here to-night gratefully acknowledge our deep indebtedness for the valuable instruction thus imparted. But what was suitable for that time is wholly inadequate for to-day. Not that the conditions have so changed that we can dispense with the information of the past; but modern requirements are so exacting, and technical facilities offered by public bodies so great, that it became essential, not only to bring our curriculum into line with those institutions, but to place the Association in such a position as to be able to be the head and fountain of architectural education in London.

The establishing of the studio and the renting of the present premises in Great Marl-

* See our last issue, p. 292.

borough-street was an enterprise viewed with fear and misgiving by many members. Those who pressed forward the scheme, fully believing it to be urgently necessary to meet the requirements of the time may now, however, congratulate themselves on the success which has resulted, and on the benefits which the profession generally has derived from the facilities for study which have been afforded. Those who have passed through this course of training are only too ready to testify to the practical nature of the instruction they have received, and there is every reason to believe that the success of the past will be more than maintained in the future.

The general principle of the old classes of design is still maintained, in that the instruction or criticism is of a voluntary nature, conducted by a body of visitors specially invited, whose instruction is of the greatest value and advantage to the students attending the School of Design. We are glad that this old and well-proved system still continues, and with such excellent results, in our Association work. We have not yet embarked upon the actual teaching of design in principle and practice, but that this must form a definite item in our programme of the future is not difficult to foresee.

I am happy in having the privilege of recording the most successful result of the first year's work of our newly established day school, which is now in a flourishing and vigorous infancy. The formation of this involved a vast amount of time and thought on the part of my immediate predecessor in the chair, and its successful inauguration must be very gratifying to him. We have been most fortunate in securing as a master Mr. Arthur Bolton, to commence and complete the first year's course. To inspire enthusiasm into the new students, and to fully satisfy the intentions of a Committee who were keeping their eyes upon the future of the school, must have taxed the best and most genial of men. Everything has dovetailed in a most admirable way, and the success of the first and somewhat experimental year augurs well for its long and growing influence.

The year's work has, however, demonstrated beyond all possibility of doubt the absolute necessity for other and more suitable premises. It needs no little skilful negotiation in our now very confined limits to make everything work with the smoothness so necessary in an educational institution. How difficult this is may be judged from the fact that the day school hours are from 9.45 to 5 and the evening school from 6.30 to 10. It is unnecessary for me to reiterate what has been stated so often from this chair, that the Committee are still on the look-out for premises. I ask, however, for patience, fully expecting to be shortly able to make an announcement which, while fully meeting all our needs, will be gratifying to a degree to our members.

The object of the Architectural Association is to teach—in a measure—architecture, while its lofty aim is the improvement of the art. I do not by this mean to infer that it is possible for us to outshine the brilliancy of the work of the ancients, or of the masters of the Gothic or Renaissance periods. Our object is not to revive this or that period, but rather by the study, contemplation, and comparison of that which has gone before us in all that is noble, beautiful, and pure, to acquire those principles of proportion, those refinements and elegances of form and detail which have been the constant admiration of mankind in all ages. By such reflective study we seek to originate an inspiration which will subserve itself to the utilitarian requirements which our day and generation demand from us as architects, form being subservient to purpose, and use put into effect may be so suitably and constructively dressed as to commend its result not only to those who employ us, but to all intelligent and thinking observers of the beautiful and suitable in the greatest of the constructive arts. We feel that the deeper, the wider, and the more analytical our study of the work of the past, the better shall we be equipped for the production of original work, and the less likely shall we be to fall into the dry and uninteresting groove of the mere copyist. We desire no "New Art," casting aside in a moment the traditions of the past, but a steady and rational development on a sure and solid foundation; the same process of development which has produced everything in art which has been lasting and worthy of admiration.

Our ideal is no doubt a very high one, and in order to achieve it so far as lies in our power, we have collected for the guidance and instruction of our students (if I may quote from a recent address) "Brains, similar to the collecting of rare books or works of art." In our instructors we have a body of gentlemen of attainments which our predecessors in this Association would have envied. The requirements of the fully qualified architect cover so wide a range of knowledge, and true education is so lacking in most of us, that many are prevented from attaining the best results. We endeavour to bring the average man, who comes to us with his mental capacities trained at a good school, in contact with the best brain power the profession can offer him, and this before bad professional mental habits are formed, which eventually would lead him to wander illogically from pencil to paper, and thence into practical being in a building, which unlike a picture, cannot be painted out, or hidden away from the gaze of mankind.

I am not afraid to assert that architecture in this country is cursed by ignorant mental habits which a simple and well-defined system of education would have rendered impossible. Even the genius (there are such, and we are glad to have them, though their percentage is small to the generality of men) may profit in no small degree by the training and knowlege we have to offer him. But it is to the average, not the exceptional, man that I wish more especially to address myself. An employer seeks the services of an architect in his necessity; that man usually is the average man. Generally speaking, it is the all-round man of good average ability who, by dint of long, patient, and persistent study, is he who makes the most successful and valued practitioner. Speaking the other day of another profession, the President of the British Association said: "It was in the abundance of ordinary plodding ability, thoroughly trained and methodically directed, that Germany at present has so commanding an advantage." These weighty words abundantly express what it is the object of our Association to provide, and what, I sincerely trust, it is the whole-hearted aim of our students to acquire.

We have no new style to invent. It would be as sensible to invent a new language for the British nation. But as we read Shakespeare, Milton, and Addison, or study the elegancies in diction of Lamb, Burke, or Bright in writing and speaking in beautiful language, so our endeavours should be to graft upon the construction of our designs such sympathetic qualities as shall form a perfect marriage between the beauty and form of the architectural outlines and the practical necessities and objects of our buildings.

Our educational work is not to cram for an examination; far from it. The examinations of the Royal Institute of British Architects do indeed test our work, but are a means, not the end, we have in view. It is to be regretted that cramming do exist. I again quote Professor Dewar's brilliant address, which is singularly applicable to us as architects: "There are," said he, "plenty of chemists turned out now by our Universities, but they are of no use for practical purposes. They are chockful of formulæ. They can recite theories and they know text-books by heart. But put them to solve a new problem freshly arisen in the laboratory, and it will be found that their learning is all dead. It has not become a vital part of their equipment, and they are 'floored' by the first emergence of the unexpected." Now, the end of all this is to show that our desire is to make our students learn to think "as a vital part of their mental equipment."

Much has been said, and much more no doubt will be said, on the much-vexed subject of architectural competitions, and I do not wish to enter upon a discussion of the question from its more controversial points of view. I am amongst those, however, who do not regard them as an evil to be fought against, and eventually, if possible, abolished. The fact that they provide the young and obscure architect with his opportunity seems to me to be sufficient to justify the principle without seeking further for reasons. Almost every argument which has been urged against them has not been so much against the system as against the abuses which have occurred in their conduct; these are undoubtedly preventable, and the remedy lies entirely in the hands of the profession.

It is, however, of the educational aspect of competitions that I wish to speak. I know of no better means by which a young architect can acquire knowledge and experience in design than by taking part in a competition for a definite building for an actual site: in no other way can he so well attack the practical, as well as the æsthetic problems, and in no other way can he have an opportunity of comparing his efforts with those of more experienced and practised architects. If, however, he is really to profit by such experience his design must be a serious effort, carefully studied and restudied until it appears to its author to be as perfect as he can make it, until he can conceive no possible objection or fault which is capable of remedy. The brilliant idea, the flash of genius, dashed off in half an hour, never did and never will succeed in a competition. And withal, the young competitor (and I might also add the old one) must always cultivate the habit of self-criticism, and must be always prepared and even anxious to admit his inferiority. He must always have in mind that his task is not merely to find a solution of the problem in hand, but the best possible solution. This, of course, should be the object in all design, competition or no competition, but I fear it is so in comparatively few cases, judging by the work we see around us every day. The principle of competition should give the necessary incentive for the effort required. It is, of course, essential that the conduct of competitions should be beyond all question, and that every possible means should be adopted in the selection to secure the choice of the best design submitted. Matters have greatly improved in this respect of late years, but much still remains to be done. The profession can, if they will, compel promoters to conduct competitions in a satisfactory manner, and all those who are working for this end should have the support of every architect in their endeavours.

Much as architects have to deplore the ignorance and apathy of the public towards their art, I believe there is slowly, but none the less surely, developing a movement towards a better appreciation of architecture. The building public are, I truly think, growing anxious to have real architecture, and are willing to pay for it if they can get it. It is our business to give it them, so far as lies in our power. Public bodies are becoming very keen to have buildings of which they can be proud, and which are not designed merely to serve their utilitarian purpose. One sees occasionally an architectural article in the daily press, evincing nearly always, it is true, an ignorance of the subject positively appalling, but still showing that there must be a desire on the part of the public for information. It is much to be regretted that these articles when they appear are so often incorrect and misleading. We, as architects, may I think, do much to educate the public in these matters.

Without apology to our seniors, I now wish to address myself more particularly to our younger colleagues, and especially to those members of our day school whom we are glad to cordially welcome within our ranks. You have entered one of the most fascinating and noble of professions it is possible to select, and with diligence and devotion to your studies you will find your work provide you with many recreations. Art is long, and life at the best short, and you will find much to interest and delight you throughout your career. It is not given to everyone to be a genius born; indeed, it is well that it is not so, insomuch as many such are impractical and visionary dreamers in a matter-of-fact world. Your ultimate aim is to become a refined and capable practising architect, and with this in view you will do well to organise your studies into a system which for reference will stand you in good service in after years. Reflect upon what I have said as to the cultivation of the mental habit. Analyse the reason and basis of everything. It is not enough to sketch and draw. You must inquire and investigate as to why this is beautiful, and why that is unlovely. Above all, I would have you not regard your profession as merely a means of livelihood. That, of course, is a necessity, but if you are to excel, it must be your recreation, and, indeed, your life. The real and sweetest reward of your labour will always be the appreciation of your fellow-workers, who know so well the difficulties you have had to meet, and can estimate the measure of your success.

It is all important that you should be capable draughtsmen. I do not by this wish to convey the idea that draughtsmanship is architecture; far from it, it is often the reverse; but by

draughtsmanship an architect is able to record his conceptions and to dissect his ideas. A well-known professor of architecture at the Royal Academy, in urging precision, advised his hearers to throw away their indiarubber. I advise you to do the reverse. Do not be afraid of that invaluable means of erasure. Rub in and rub out until you have secured what you believe to be right. Above all things, do not work upon an empty head. You might as well work upon an empty stomach and expect to have physical energy and activity. But first feed your mind with examples, reflect upon and analyse these, whether from illustrations or your own recorded sketches. Then put these on one side and conceive what is suitable to the position and character of the subject in hand. You may be only the average man, but by persistent study and patient endeavour, precept upon precept, line upon line, here a little and there a little, you will be able to build up a reserve of information which will be of great and lasting value. Any way, there is no room in the profession for the lazy man—I hope he is not here to-night—as the rewards which diligence brings have to be sought with love and labour. Your profession calls for some self-denial; it would not be worth much if it did not do so, perhaps some expenditure of midnight oil may be necessary, but this will not be detrimental if exercised with wisdom and moderation.

The priceless collections in our museums await your inspection and study, together with an appreciative knowledge of the best works of painting, sculpture, and the allied arts, both ancient and modern. The same may be said of the ancient buildings of London and the neighbourhood. The best works of modern architects seem to me to be a faithful and helpful study which is not fully taken advantage of by our students. Our spring and summer visits, so admirably organised, will afford you facilities for going further afield.

It has, I fear, become somewhat the custom to decry the particular value of sketching and measuring, while the standard of draughtsmanship has advanced by leaps and bounds. In recent years it would appear that the healthy habit of sketching is not so universal as it was twenty years ago. I commend it most earnestly to your careful attention. Nothing that I can say will be of so much advantage to you as the systematic and careful collection of figured sketches. I do not mean thereby the production of pretty pictures—a snapshot will effect that—but the thoughtful study of an ancient feature, with a discrimination which gives, as far as possible, the reason why, is a valuable record; and the fact of delineating impresses the study upon the mind for ever, and leaves a permanent influence for good.

The reflective habit should also be cultivated, whether in the contemplation of a noble building or the reading of a notable book. It is a good thing to sit before an old building and drink in its poetry; to cultivate the spirit of true criticism and inquiry. Beauty, like love, is divine and indefinable, but it must be pondered upon and pursued if it is to be secured.

In conclusion, I trust we shall return to our studies and duties after the recess with renewed energies, and that we shall be intent upon carving for ourselves a little niche, and leaving some executed work behind us which shall make the world more beautiful than it was before, and call forth the approval of those who will follow us.

Mr. Aston Webb, A.R.A., said it was with very great pleasure that he proposed a vote of thanks to the President for an address in which there was a great deal of thought, and which would be very useful to members of the Association. It was twenty years that night since he (the speaker) occupied the Presidential chair of the Association, and as he listened to the address he could not help thinking of that time, especially when the President spoke of the hope of having new premises. He spoke of a similar hope twenty years ago, and years before that other Presidents had breathed such hopes and had such aspirations. But in the address to which they had just listened there was a sentence that seemed to suggest that before very long the President would do more than express a hope; he would be able to tell them of a scheme which was arriving at fruition. He had been much struck by the changes which had taken place in the affairs of the Association since he was President. In those days the President was selected from the striving, now he is selected from the thriving; in those days the President of the Association dreamt of building town halls, now he was building them; in those days they looked with some awe upon the Royal Institute of British Architects; now, the President of the Association is an honoured member of its Council, and in those days the idea of the President of the Institute attending the opening meeting of the Association caused considerable flutter; but in these days, he was sure, it did not turn a hair! He remembered very well when he was preparing his address as President of the Association that the Secretary came to him looking very serious, and said that the President of the Institute was to be present on the occasion. He (the speaker) spent the next few days (they did not print the address in "A.A. Notes" then) in trying to bring the address up to a level equal to the occasion, but Mr. Street (the President of the Institute) did not come, and it was his sad duty a few weeks afterwards to voice the regret of the Association at the great loss experienced by Mr. Street's death, and to represent the Association at his funeral in Westminster Abbey. He (the speaker) was very glad that one of his first duties as President of the Institute was to be present to express, on behalf of the Institute, the very great interest they had always taken, and did especially now take, in the work the Association was carrying on. They recognised that the Association was almost unique amongst professional bodies—it was almost unique that the young men of a profession should undertake to educate themselves, and that they should be able to keep that education up to the advancing requirements was really a very remarkable instance of self-help. They might be quite sure that at any time the Institute could be of assistance to the Association, the Institute would be found willing and anxious friends. During his address the President had touched upon one or two points which he (the speaker) also proposed to deal with in his forthcoming address. One of those subjects was that of competitions—that, of course, appeared in every presidential address, both before the Association and the Institute. All he could say that evening was that he thoroughly agreed with everything the President had said as to competitions. The justification for them, as he said, was that they afforded an opportunity to the young and unknown architect. That was really at the bottom of the reason why this system prevailed. It gave to the young architect the opportunity of distinguishing himself which otherwise he might have to wait for. As to the day school, it certainly was a matter for congratulation that it had passed through a year of success. He had some little personal acquaintance with the working of it, and he believed it had been thoroughly efficient; and he thought they had been most fortunate in getting Mr. Bolton to manage the school. As the President had said, the young members of the Association were embarking upon what was a very noble profession—a profession in which they could engage without doing anything low or mean—in which they would serve their clients to the best advantage, and yet do nothing of which they need be themselves ashamed. That was a great point, and, as the President had also said, it was a profession which provides within its own bounds the recreation which all of them from time to time needed. But to succeed meant hard work, though success was open to all. There was no profession, he thought, which was more open. Only one man could never reach the top, and that was the lazy man. One of the most useful remarks ever made to him when he was a young man was made by an old friend, who said: "Fancy, if you arrive at thirty without knowing the general rudiments of your work!" He was about twenty-five at the time, and he began to fancy; and although when he arrived at the age of thirty he had not, of course, anything like the general rudiments of knowledge he ought to have had, he felt that he had learnt a great deal more than he might have done but for that remark; and now he handed it over to them to make use of. On behalf of the Institute he would conclude by expressing his interest in and appreciation of the work which the Association were carrying on.

Mr. W. H. Seth-Smith, in seconding the vote of thanks, said that the President had sketched in an admirable manner the general drift of the work of the Association. He was quite sure they would agree with the President's remarks, the key-note of which was the key-note of the presidential addresses at the British Association meeting this year, *i.e.*, the defective system too often adopted in England of teaching a great deal of matter—a vast number of facts and formulæ, without evoking that spirit of inquiry and thought which was at the bottom of all true education. Very earnest efforts were now being made in all directions to remedy the present defective system. No doubt many of them had noticed that Professor Sir Arthur Brooker, in his recent address at one of the polytechnics, took the same line, and gave them hope that that great idea would be paramount in the organisation of the London University, to which they were looking forward in the hope that it would reform London training, not only in the general arts and sciences and in literature, but also in the fine arts and the applied arts. At present the University could not recognise the training in architecture given in London as being up to the University standard. That was a misfortune, but it was a fact that the early training of architects, taking them all round, had not, to the present time, been up to University standard. That, it was to be hoped, would be remedied before long. The Royal Institute of British Architects and the Association would have to make it a condition that all their students and all their candidates for examination had been through a proper general education before they specialised in architecture. The aims of the Association, which the President had sketched and with which, he was sure, they would all agree most heartily, were summed up in the President himself, who represented just that practice of architecture and those points which they felt were leading them in the right direction; and he always thought that the man who represented the Association for the time being should, as far as possible, focus, and be symbolical of, the ideas which were guiding the institution of which Mr. Hare was President. As to work, he noticed a few days ago that the great violinist Kubelik had studied one piece twelve days and twelve nights in order to make himself proficient. He did not advise working like that, and there was no doubt that the Association students did work steadily, and that had been a great factor in their success.

Mr. John Slater, in supporting the vote of thanks, said he was very glad that the President had mentioned the work which one of the former Presidents had done for the Association, *i.e.*, Mr. Leonard Stokes. The success of the educational scheme of the Association was very largely due to him. No one could have sat on the Committee which Mr. Stokes presided over—before and after his Presidency—without feeling that to his tact and energy in the face of great difficulties the success of the scheme was due. With regard to the question of new premises for the Association, the President had been very reticent. It must be patent to any one that the provision of premises suitable for the Association—the finding of a suitable locality and site, and the finding of the money necessary—was by no means an easy task. He was rather amused by the President's statements of the objects of the Association, *i.e.*, "to teach, in a measure, architecture." He liked that reserve very much; but he was very glad to hear the advice the President gave to students of architecture as to their general education. It was more and more necessary for an architect who was to be successful to be an educated gentleman, and to bring that about it was necessary to get at the parents and guardians rather than the students. If those in that meeting saw some of the papers sent in in the Preliminary Examination of the Institute (which had nothing to do with architecture, but only the common, ordinary, grounding of education) they would be positively appalled, and would wonder how persons who had such a small education as those papers showed could possibly hope to succeed as architects. The more the students of that Association—or, in fact, any students—took to heart the fact that they must learn to think, the better it would be for them. In regard to what the President had said as to the interest which the public took in architecture and the way they were helped or otherwise by the public press, the point was one which ought to be made more of. The articles which appeared in the non-professional papers on pro-

fessional subjects seemed to be intended for people who knew little about the subject, and were written by people who knew less. He wished the public press, too, had not such a high opinion of the modesty of architects as it would seem they had from the accounts they gave of the opening of any building. In such accounts the name of the architect responsible for the work was generally omitted. He looked forward with interest to the work of the session which had been so auspiciously opened that evening. He noticed from the syllabus that some of the papers went very far afield: from the paper on the archaic twilight of Homer (if they were likely to hear anything luminous on that period they would be thankful) to the modern and ever fresh and new subject of competitions. With such a syllabus, he felt sure the meetings would be very interesting. When the elders of the profession thought of the means of education existing when they were students and compared them with the present, they could only wonder that they had met with any success at all.

Mr. C. Harrison Townsend, who also supported the vote of thanks, said he was very glad the President had urged upon them the necessity of study, study, study. No doubt the President would agree that besides study, besides education, there was something else which went to the making of an architect. A successful architect was not all education; he was not all learning; there had to be in him a certain aspiration which the poverty of the English language compelled him to call the gift for invention. A man might study; he might know; he might be acquainted from beginning to end with all the text books; but without the quality of invention they were of little use, and "invention" did not mean a gift for adaptation; it did not mean the ability to dig in the past, to disinter the past and to bring it forward and make it subservient in our own day; but it did mean the general impression of the past made on our mind, and the result—not of the things of the past, but of the sense of the past—showing itself in our work. He cordially agreed with the President's positive prohibition of the young architect's wish to create a new style, or even to think of a new style. They could not invent a new style; all they could do was to work with the materials gathered from the past, and translate them into their work through themselves. Though we talked the language of Milton, Shakespeare, or Addison, we did not chop sentences out of their essays or poems, string them together, and call them our own work. We educated ourselves to speak the English of the great masters of the past by studying those masters. We must educate ourselves to be architects of beauty by speaking the language of to-day, and speaking it just as, in great measure, we are acquainted with the best in the past.

Mr. E. W. Mountford, in congratulating the Association in having Mr. Hare as their President, said he did not think there was any man living whose work had shown such consistent improvement as had that of their President. He was glad to observe that the President referred to architecture as a "calling." There had been many discussions as to whether it was a profession or an art, but the difficulty seemed to be got over well by referring to architecture as a calling. It was really not worth while to spend time, as some gentlemen did a few years ago, in considering whether it was a profession or an art. So long as an architect did his level best to design well in his own way and produced more or less good work, it did not matter what that work was called; the work would be there to speak for itself. He would emphasise one remark the President had made, *i.e.*, as to the necessity of studying modern work as well as old. He had a very strong impression that some of the old buildings we admired so much now would not have called forth that admiration if we could have seen them when they were new. He was quite sure that if some of the old churches we see and admire so much were being erected now we should have articles in the professional Press showing how entirely bad they were; it was owing to the kind hand of Time that many of them were so beautiful. Consequently, there was hope for their work to-day. No one knew what it would be like three or four hundred years hence—if it should be standing. The study of modern work was very desirable; they saw such a lot that they could improve upon or avoid with advantage, and really they saw a great deal that they could genuinely admire. He believed that buildings were being erected now which were quite equal to anything which was ever put up in England, and that in future days the work of the early twentieth century would be much studied by A.A. students, and he believed the study would be to their advantage.

Mr. Webb then put the vote of thanks to the meeting. The motion having been agreed to very heartily,

The Chairman, in reply, said he regarded it as a great honour to be their President, especially having regard to the number of distinguished men who had already occupied that chair. The position was a responsible one, but he should spare no effort to render the session as successful and useful as any which had passed. Many very important subjects of the greatest consequence to the Association were looming in the immediate future, and he was fully conscious that the dealing with them would require careful consideration on the part of those who had the direction of the Association in their hands. No thought would be spared by himself or the Committee in dealing with those questions. As to what had been said about the importance of the general education of architects, he thought they could congratulate themselves on the improved type of students who were now entering the Day School—scholars from public schools—and it looked as though the general education of the coming generation of architects would be very much better than it had been in the past.

The Chairman then announced that the next meeting would be held on the 17th inst., when Mr. T. R. Spence is to read a paper on "Homer and Architecture." Mr. Slater, he said, seemed to be in doubt as to what sort of information Mr. Spence could give them. He might say that Mr. Spence was an enthusiastic student of Homer, and his knowledge of the subject, and of the subject in connexion with architecture, was really second to none. Mr. Spence would have many things that were new and interesting to tell them, presented from the point of view rather of the painter than of the architect—a point of view from which matters were not often looked at in that room. He looked forward to a most instructive paper and he hoped there would be a good attendance.

The meeting then terminated.

MAGAZINES AND REVIEWS.

The *Art Journal* devotes an article to the work of Mr. Hugh Cameron, and Mr. Claude Phillips continues his learned critical analysis of the Wallace collection, dealing in this issue with the Netherlandish pictures, especially the examples of Rembrandt. In regard to the "Ideal Landscape" by this painter, the illustration of which is placed at the head of the article, we quite agree that Rembrandt in this instance appears as a romancist in landscape instead of a realist; it is curious how the landscape seems to tell its own story in this sense; it is so obviously a "composition," in which elements not generally found united in an actual landscape, are brought together and arranged for pictorial effect. Among the illustrations to Mr. Hugh Macmillan's serial article on "Rothiemurcus" is an exceedingly fine study of Highland scenery, "Rocks above Loch Eunach," from a drawing by Mr. Scott Rankin. Mr. Wallace Rimington's water colours form the subject of an article by Miss Ellen Browning; the subjects illustrated, mostly architectural, show better, to our thinking, in black and white than they do in colour. Mr. Day contributes an article on "Tooled Bookbindings," in which he gives good advice as to the advisability of leaving a certain proportion of the leather surface untouched, several of Mr. de Sauty's designs (which are the best among those illustrated) giving examples of the effect resulting from this judicious reserve on the part of the tooler. There is an imaginary (?) discussion between Mr. Brewtnall and Mr. Day on "Book Illustration," the question being whether illustrations are really a desirable addition to a well-written story. The argument seems to be "drawn," each disputant retaining his own opinion—Mr. Brewtnall for, Mr. Day against the illustration. We are decidedly with Mr. Brewtnall, on one condition—that the illustrations are of such ability as really to assist in throwing light on the characters and scenes, and not merely for the sake of making pictures. "What is the use of a book without pictures?" said Alice in Wonderland; and that is the attitude of the general public mind. We have just heard this week of a book-club in a small country town where a resolution has been passed that "no magazines should be subscribed for except illustrated ones." There is the "reading public" at one stroke. Unquestionably Lewis Carroll's books owe an immense debt to Tenniel's illustrations; but these are exceptionally good; there is real genius in them. Thackeray injured "Vanity Fair" and "Pendennis" by his own illustrations, which are only a vexation to the reader; Dickens, whose literary weakness was a tendency to caricature, suffered still more by the vulgarity of Hablot Browne's illustrations; and in spite of a few happy hits in Mr. Hugh Thompson's illustrations to Jane Austen, on the whole the possession of them is no advantage to the reader. And in magazine literature there can be no doubt that the admirable character of the illustrations in the *Century*, *Harper*, and *Scribner* has too often availed to pass off very inferior literary matter; a poor or flippant story is made tolerable by clever illustrations; and in so far, in periodical literature, the book-illustrator's art has been a bad influence.

The *Magazine of Art* announces an important change and enlargement in its contents and illustrations, which will be accompanied by a reduction in price. It is intended to give more examples of colour reproduction by the more refined and complete methods now obtainable; and there is to be a new fount of type and improved paper. The present issue includes "Fragments of My Autobiography" by Rosa Bonheur, with a number of reproductions from various studies of animals. The slight autobiographical sketch gives some interesting details of the artist's early life and studies, including spending whole days in the slaughter-house at Roule to study the animals. As she observes, "one must be greatly devoted to art to stand the sight of such horrors, in the midst of the coarsest people," who seem to have received her in anything but a friendly spirit. "The Leek School of Embroidery and its Work" is the subject of an article by Mr. W. Shaw Sparrow, and there is one on "A Modern Illuminator," Miss Jessie Bayes, of whose work, however, we get only the design, not the colour. "Studies in English Costume" by Mr. Richard Heath, deals with the ladies costume of the George II. period. The article goes to show that it was in this period that a reaction took place against stiffness and conventionality in dress forms, and that this reaction was very closely connected with the love of flowers which was a characteristic of the period. We hope the subject will be continued; it is one of considerable artistic interest.

The *Berliner Architekturwelt* is largely occupied with illustra ions of villa architecture, partly executed works, partly designs in the Berlin Art Exhibition of 1902. Among these are studies for a garden house by Herr Schwager, and an interior of a sitting-room by Herr Biberfeld (both of Berlin), which are of considerable interest and originality, the more so as they are free from the "gimcrack" taste which is the besetting sin of German villa architecture. Some other interiors from the same exhibition, on other pages, are of good quality; these appear to be photographs of built-up interiors and actual furniture. Among the various illustrations of sculpture and painting from the Art Exhibition, is an admirably characteristic painting, "Kirchgang," by Herr Eckhardt, of Berlin (four old women on their way to church through the fields), a capital example of *genre* painting.

The *Architektonische Rundschau* numbers among the illustrations of its last issue a view of the front of the *Allgemeinen Zeitung's* offices at Munich, the ground story of which has the merit of showing a frank and unaffected treatment of iron construction, unfortunately contrasted by the terrible detail of the gable which forms the central feature. Professor Dülfer, of Munich, is the architect. No building of great importance is illustrated. The front of the Public Library at Stuttgart, by MM. Eisenlohr and Weigle, of that city, shows an interesting attempt to make a roof-garden an architectural as well as a recreative feature, the presence of the garden being symbolised by a light colonnade rising from the parapet, with a wooden architrave, around which, and around the columns, climbing plants are twining. A rough-cast and half-timber villa at Faulenbach

by Herr Leinweber, of Munich, shows a new decorative treatment of the inner faces of the exterior window shutters, as they appear when opened back against the wall, by a system of alternating light and dark bands painted (or otherwise produced) in undulating lines drawn slantwise up the shutter; the effect is rather good.

The *Antiquary* contains an interesting article by Mr. J. Russell Larkly on the Church of the Blessed Virgin at Burham, Kent; a deserted church on the banks of the Medway. The article is illustrated by some sketches of detail. One of the characteristics of the structure is the use of tufa blocks in portions which are of Norman date. Mr. W. E. A. Axon contributes notes on Miltenberg (Bavaria), an interesting and little-known locality. Mr. Sheppard concludes his article on "Hull Merchants' Marks."

Blackwood has an important article on "The Treasury and Art in Scotland," giving an account of the state of official encouragement to art study at present existing in Scotland, and the history of its development, so far as it has developed. It appears that an institution called "The Board of Manufactures" is the custodian of the Scottish National Gallery, and it conducts a school of design, now, it is averred, of little use to the linen manufacture (for the good of which we gather that it was originally started), and, according to the painters, of still less use to them:—

"Founded, as has been said, for the purpose of training designers for the linen manufactories, this school did good work for many generations of students. It appears that in later years its chief purpose was to capture medals at South Kensington: it became a prey to the deadly system of payments by results. That phase passed when the Science and Art Department changed its methods, but the tradition remained in Edinburgh; and though the school is now in a state of semi-pupilage to the Scotch Education Department, it appears to be gradually verging towards petrification. The cause of its decay is not far to seek. No teacher, however skilful, can do good work without constant stimulus from without. . . . . The School of Design has no rival: it has no visitors; it appears to pursue a serene course on definite lines without regard to the bent of its pupils or the advancement of public taste. Such, at any rate, are the assertions of many competent to judge, who desire new methods, who aim at different ways. . . . . The Board is also the patron of a School of Applied Art, which is reported to have been of great advantage to architects. Further, it possesses a collection of casts of antique sculpture, badly arranged, no doubt, but still capable of being of use to the student of the history of ancient art. For practical purposes these casts, however, are of no value. The cast-marks are, in most cases, obliterated: successive coats of paint have obscured the anatomy of the figures, and to the student who desires to become either a painter or a sculptor they are not merely useless, but actually harmful, objects of study."

The list of pictures which are in the Scottish National Gallery, and of those which are not there, is depressing, but entirely tallies with our own recollection. Here the Board "has acted according to its lights—and its purse." The Imperial Treasury has done little for the establishment. The general suggestion of the writer of the article is that Scotland has been starved in respect of art; that consequently the official art institutions of the country are in a moribund state, and that something should be done by the Imperial Government to give them the means of new life.

The *Monthly Review* follows other examples with the inevitable article on Rodin, by Mr. T. Sturge Moore, who is not quite so far gone as some of the Rodinists, and even admits that the excellence of the idol may be a subject of discussion and difference of opinion; but he discusses the Balzac monstrosity as if it were a serious work of art—"The question is, does marble lend itself to such a treatment of form, and on that colossal scale?" Treatment of form! Why, the very point is that there is no form at all. As with so much of the present-day literary writing on art, the article is exceedingly vague in its expressions, and one doubts whether the writer distinctly knows what he means himself. "The Laocoon fails where the Metopes of the Parthenon succeed; for, with all its ability, it does not convince us of its propriety, but is at once perceived to possess what beauty it has on a lower plane." Now, what is the real meaning of that in plain and definite English?

The *National Review* contains an article on "The Serious Problem of the Motor-car," by Mr. Alfred Harmsworth; an advocate's article, but not a prejudiced or unreasonable one. He points out that the real element of danger lies not in the motor-car itself but in the driver, and that he is not at present required to have any legally recognised qualification. No more, it might be replied, has the driver of an express train; but the cases are not quite similar, since the train driver is in the employ of a company which exists for the special purpose of conducting railway travelling, and the driver is either brought up under their own eye or comes to them with a character from another railway company; whereas the amateur owner of the motor-car may have no capacity for judging of the competency of his driver, and has no certificate but that perhaps of another amateur owner. The argument in favour of a legalised certificate for the motor-car driver is therefore, we think, reasonable. Mr. Harmsworth is in favour of registration and the large identifying number on the car; he admits that it is disagreeable and contrary to the habits of Englishmen in regard to private vehicles, but the road between San Remo and Cannes convinced him of its necessity.

The *Fortnightly Review* contains an article by Mr. Claude Phillips on the Bruges Exhibition. The main point of the article is the endeavour to distinguish, on sound critical grounds, the work of the two Van Eycks; the writer's position being that Hubert is by far the greater artist, in conception, at all events; that Jan Van Eyck has been credited with work which should rightly be attributed to Hubert; at all events, that the two are more distinct in style and genius than has hitherto been supposed.

The *Pall Mall Magazine* contains an article by Mr. Chauncey Depew on "Impressions of London and Londoners in Coronation Year." It is more concerned with impressions of the London people and their ways than with the architectural and decorative aspect of the capital, though the general aspect of the decorations is touched upon, in a rather more indulgent spirit than we fear we could have accorded to it. "An Iron Golconda," by Mr. Harwood, is a description of work in the iron-mining region on Lake Superior.

Scribner contains an article by Mr. Russell Sturgis on the work of the American sculptor, Mr. Ward, who is now undertaking a very important piece of public work, the sculpture for the tympanium of the new Stock Exchange, New York, a building to which we have before referred, and which is now approaching completion. We do not gather what is to be the precise nature and subject of the tympanium group; the object of the article seems to be to show, by illustration of Mr. Ward's other works, that he was the right man to do it. The illustrations, we fear, go to confirm the impression that American sculptors have not achieved style in sculpture yet. Those shown in this article strike one as well-meaning, but nothing more. Under "The Field of Art" M. Sandier's interesting article on the Louvre, to which we referred last month, is concluded. In the same number Mr. P. G. Hubert writes an article on the American Fire Department's work, under the title "Fire-Fighting To-day and To-morrow." We gather from it, at all events, that the Americans are thoroughly satisfied with their own system, and convinced that they have nothing to learn from any other country. The description of the American system and apparatus ought, however, to be of general interest. We gather that in the street fire-alarms it is not necessary to break a glass, but you have to "turn a handle to the right" to open the box, and when there is real danger a nervous person can hardly even follow this simple direction. If this is the usual arrangement, however, it shows a faith in the good sense of the public not to sound the alarm needlessly which will hardly be felt here, where even the glass has been frequently broken to send sham messages. The writer of the article makes a wise practical remark as to the duty incumbent on citizens to acquaint themselves with the whereabouts of the nearest fire-alarm, so as to be able to go straight to it in an emergency without losing time. He mentions a case where two children were suffocated in a house while a citizen who did not know where the nearest fire-alarm was ran "two blocks out of the way" to find one (we presume there is one in every block). "Those two minutes cost two lives." This is a lesson which London residents might take to heart. How many London householders know exactly where their nearest fire-alarm is if they were suddenly called upon to find it?

Harper contains an article by Mr. C. Mulford Robinson on "Art Effort in British Cities," a subject which the writer says is of peculiar interest to Americans because the conditions under which such effort is carried on in England are more similar than in any Continental country to the conditions existing in American cities. The article is rather descriptive than critical, and is written in a very fair and impartial spirit. Mr. Robinson seems much struck with the prevalence of the Art School everywhere in English provincial cities. Nevertheless he thinks (and we can hardly differ from him) that "municipal art is not advanced in English provincial centres. From that standpoint they are in a transition stage. They have grown rapidly, and, as a rule, content to expend their energy in laying foundations for future civic glory, the ugly and gross has been suffered to show upon the surface. Below are the efforts that will tell: firm, intelligent, honest grasp of municipal monopolies, and a thorough and far-reaching art instruction." One criticism, however, is worth quoting, on a matter which, owing to habit, would not perhaps occur to an English critic:—

"To an American, nothing is as striking, in the half-suburban residence quarters of an English city, as the high walls that enclose the gardens. Edgbaston, which is the fashionable west-end suburb of Birmingham, may be taken as a type of it. The broad streets, overhung by noble trees, curve and wind in a most fascinating manner, presenting topographical advantages of rare loveliness; but the houses on either side of the road are enclosed by high walls of brick and stone. Now and again the luxuriant ivy gives to these walls a beauty of their own, and trees spreading their branches over them suggest coolness, seclusion, and beauty within. But such amenity to the public way has come not because of the walls, but in spite of them, and the observer who takes the æsthetic standpoint sees, when he goes to a newer suburb where the walls are of glaring brick, and the highway, that really runs between pleasant gardens, has become a prison walk, what sacrifice of city beauty is made by this custom to unconscious selfishness—or, in politer phrase, to that individualism that is peculiar of the nation."

"Peculiar to," we suppose he means; but the point is worth consideration. The origin of the walls is really, of course, the pardonable desire for privacy which is "peculiar of" the English household.

The *Revue Générale* includes an article by M. Van der Smissen on "Accidents du Travail," in which the writer reviews and compares the working of the law in regard to workmen's compensation for accidents as it exists in Germany, Belgium, and France. The English law on the subject is not taken into consideration.

In the *Gentleman's Magazine* Mr. Crawley Boevey writes an article, under the title of "Strong as Iron," which is a historical sketch of some of the old English iron mines and forges; and Mr. Gerald P. Gordon contributes one on "Some Early Art Sales," the adjective "early" not denoting anything before the seventeenth century, towards the close of which the interest in art sales seems to have arisen. The article contains some interesting gossip in regard to old collectors and auctioneers.

THE LONDON COUNTY COUNCIL.

The first meeting of the London County Council after the summer recess was held on Tuesday in the County Hall, Spring-gardens, Sir J. McDougall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Southwark Borough Council 12,920*l.* for sewerage works; Battersea Borough Council, 5,000*l.* for electric lighting purposes; Hackney Borough Council, 800*l.* for a street improvement; Lewisham Borough Council, 2,250*l.* for a bridge improvement; Fulham Borough Council, 25,000*l.* for electric light installation; Lewisham Borough Council, 4,250*l.* for underground sanitary conveniences; Stepney Union, 6,100*l.* for the erection of schools and cottage homes; Southwark Union, 3,200*l.* for drainage works at the workhouse; Bethnal Green Guardians, 3,785*l.* for completion of the infirmary; Hackney Union, 18,000*l.* for the erection of casual wards, and for other work; Holborn Union, 2,000*l.* for erection of casual wards, &c.; Battersea Borough Council, 650*l.* for electric lighting works of public libraries; Woolwich Borough Council, 2,300*l.* for works at public baths; Poplar Union, 8,000*l.* for various purposes; Mile End Old Town Guardians, 1,300*l.*

for purchase of premises required for poor-law purposes; and Islington Guardians, 16,000*l.* for infirmary buildings. Sanction was also given to the following loans:—Westminster City Council, 4,600*l.* for plant for street cleansing, 1,800*l.* for provision of hydrants, and 894*l.* for street lighting; Hampstead Borough Council, 2,830*l.* for boundary walls at stoneyard.

Chairman's Annual Address.—The greater part of the sitting was occupied in the reading of the Chairman's annual address. In speaking of improvements, the Chairman said the Council had carried through four schemes of improvement on the recommendation of the Improvements Committee, at an estimated cost of 462,552*l.* During the year one important improvement was completed—namely, the construction of Tower Bridge-road. Considerable progress had been made with thirty-three improvement schemes in course of execution—the two most important of which were the new street from Holborn to the Strand, and the Westminster improvement scheme. Some of the improvements now being undertaken were in districts rich in historical associations. Wherever possible, buildings of historical interest were preserved, but when it was absolutely necessary to demolish them, the greatest care was taken to preserve the most interesting portions. Moreover, during the work of excavation vigilance was exercised to secure and preserve any objects of archæological interest which might be brought to the surface, a reward being offered to the finders thereof. In that work of preserving objects of interest the Committee had had considerable assistance from the Historical Records and Buildings Committee.

Speaking of the Main Drainage Committee, he said:—

"The Committee supervises and advises the Council on the all-important work incidental to the conveyance, treatment, and disposal of the sewage and main drainage from an area of 140½ square miles, with a population of 5,137,435 persons. The magnitude of the work may be judged from the fact that 85,505 millions of gallons of crude sewage were chemically treated at the precipitation works last year. This enormous volume represents an average flow of nearly 235 millions of gallons every day. The quantity of sludge taken to sea was the largest on record for any one year, and amounted to 2,479,000 tons, or nearly 48,000 tons a week. The net maintenance expenditure was 246,694*l.*, which is equivalent to a rate of 1·63 in the pound, while the outlay on capital account amounted to 175,920*l.* It may be interesting to recall the fact that the net capital cost of the system as at present established has been 8,368,490*l.*, of which a sum of 1,561,613*l.* has been incurred by the Council during the thirteen years of its existence. The work of the Committee being more or less of a technical nature has figured but little in the debates of the Council, but the unobtrusive manner in which it has been done speaks none the less of its efficiency. The growth of the population of London since the establishment of the main drainage system about forty-five years ago has, however, made it incumbent upon the Council to take measures for providing additional main sewer accommodation, and the special feature of the year's work has been the progress of the extension of the system. The expenditure voted by the Council previously to March 31 in respect of the scheme amounted to 1,263,000*l.*, but the final completion of the scheme, including the construction of large intercepting sewers from east to west of London, and the provision of additional machinery at pumping stations, involves an estimated expenditure of 2,947,000*l.* Sections which are estimated to cost 267,390*l.* are already well advanced, while the amount actually paid during the year was 93,217*l.* The Committee is impressed with the importance of pressing forward the work as rapidly as possible, and every endeavour is made to retain the system in an efficient state to meet present and prospective demands."

As to bridges, he said:—"The Thames Tunnel Act, 1900, empowered the Council to construct a tunnel under the Thames from Rotherhithe to Ratcliff. The scheme is being steadily advanced, some 77,000*l.* having been expended in the acquisition of property. A draft scheme for rehousing the 2,307 persons of the working classes who will be displaced has been submitted to the Home Secretary, and every effort is being made to secure that the necessary accommodation shall be ready before any of the persons are actually displaced. It is expected that the drawings for the construction of the tunnel will be completed by the end of the year, and the contract let in the early part of 1903. The total length of the tunnel will be 6,825 ft., or about 1¼ miles, the external diameter will be 30 ft., or 3 ft. wider than the Blackwall Tunnel, and sufficient to obtain a carriageway of 17 ft. in width, and two footways each 4 ft. 2 in. wide. . . . Vauxhall Bridge, so far as the work of reconstructing the piers and abutments is concerned, is rapidly approaching completion, and it is hoped that matters may be sufficiently advanced to let the contract for the superstructure in the early part of next year. About 106,000*l.* has been expended upon the work, which should have been completed in March, 1901. The contractors, Messrs. Pethick Brothers, having completed only two-thirds of the work, the Council's Engineer has exercised the power conferred upon him by the contract, and has called upon the contractors to provide more plant and engage more men and to work by night as well as by day whenever practicable. The work of reconstruction of Bow Bridge, Cat-and-Mutton Bridge, and Rosemary Branch Bridge is in hand. . . . With regard to 'housing,' good progress has been made with the development of the Totterdown Fields estate, Tooting, where cottages may be expected to be ready for letting in the late autumn. A new estate at Old Oak Common-lane, Hammersmith, has also been purchased. This estate is within the county, and will, on its 50 acres, afford accommodation for some 9,200 persons. Under Part III. of the Housing Act of 1890 and under the Act of 1900, the Council has power to acquire sites inside or outside the county and irrespective of any obligation. The Metropolitan Borough Councils also have powers under the Housing Acts to provide accommodation within and without their boroughs. To prevent any clashing in the exercise of these powers between the Central and the Local Authorities, a conference has been held and resolutions passed which are fully set out in the Committee's report. The Council has now about 348 acres of land acquired for 'housing' purposes at a cost of 217,000*l.*, and upon this land dwellings, chiefly cottages, for about 68,000 persons have been, are being, or will be built at a cost of nearly 3,000,000*l.* Having regard to the large sums of money which have to be paid by the Council for the acquisition and clearance of insanitary areas, the question is suggested whether it is just that a public authority should be required to pay such large amounts to an owner who has neglected his property and allowed it to become insanitary. It is now coming to be generally admitted that the slum owner, whose neglect of his property often jeopardises the health and life of a large community, ought to be required by law either to put his property into good order or pay the public authority for executing the clearance scheme which has become necessary owing to his neglect."

As to the work of the Fire Brigade, he said:—

"The amount paid for maintenance last year was 213,820*l.*, as compared with 115,425*l.* in 1888, and the expenditure on capital account was 69,206*l.*, as compared with 47,631*l.* The fact that since the Council came into existence it has spent nearly 700,000*l.* on capital account proves that there has been no hesitation on the part of the Council to keep the brigade in the highest possible state of efficiency. To this end the Committee has been steadily occupied in giving effect to decisions of the Council to largely increase the protection against fire, not only by considerably adding to the number of fire-stations throughout the county, but by substituting new and improved buildings for several existing stations, and by enlarging others. The past year has witnessed the completion of stations at West Hampstead, East Greenwich, and Perry Vale, and the commencement of the erection of new stations at Highbury, Homerton, and Euston, and the enlargement of the station at Stoke Newington. In several other cases drawings of stations to be erected on sites which have been secured are well in hand, and negotiations for the acquisition of other sites are in progress. Some of these works form part of the big scheme approved by the Council in 1898 and involving a capital expenditure of nearly a quarter of a million sterling. During the year 1901 there were 207 lives endangered by fire—of these ninety-seven persons lost their lives. Of the remaining 200 persons, forty-one were rescued by horsed escapes and otherwise, fifteen of the ninety-seven persons mentioned were taken out alive by firemen but afterwards died, and seventy either died or were taken out alive before the brigade was called—the remaining twelve were found dead by firemen. The policy of increasing the number of horsed escapes has been continued, the desire being that eventually there shall be a horsed escape at every station. At present fifty-six of the sixty-eight land stations are thus equipped. The increase of the number of horsed escapes has enabled a further reduction to be made in the number of manual escapes stationed in the public thoroughfares. There are now 750 fire-alarms, and many more are on order. Nearly all the 750 have been adapted for the transmission of telephonic messages. There are now 27,000 hydrants in all parts of the County of London, more than two-thirds of these having been fixed since the Council came into existence. The number of fire calls during the year amounted to 4,805; of these 3,684 were calls for fires of which ninety-nine were classed as serious and 3,585 as slight. This percentage of 2·6 of serious fires is the lowest average that has been known, showing the alertness of the brigade in preventing small fires from becoming serious. . . ."

The following portions of the address will be of interest to some of our readers:—

"During the year two very important sets of bye-laws made by the Council have come into force, viz., those relating to the construction of drains and those regulating seamen's lodging-houses. The drainage bye-laws are enforceable by the metropolitan borough councils. These bye-laws, by providing a uniform code of requirements in drainage matters, supply a need long felt in London. The bye-laws respecting seamen's lodging-houses enable the Council to insist on these houses being kept in a proper sanitary condition and free from overcrowding. The Council has also during the year obtained the approval of the Local Government Board to bye-laws which have the effect of requiring the removal of peat moss manure in properly constructed and covered vehicles, and it is hoped in this manner to remedy a nuisance which has been the cause of much complaint. The Committee's report gives some interesting details as to the result of experiments undertaken by the Council with a view to ascertain the value of various disinfectants under the conditions of their use in dwelling-houses. Corrosive sublimate was fatal to all microbes, while carbolic acid, formalin, and sulphurous acid gas only failed to destroy the most strongly resistant germs. The increasing attention shown to matters of sanitation is evidenced by the fact that the number of sanitary inspectors employed in London has increased from 188 in 1893 to 275 in 1901.

For the purposes of the administration of the Building Act, London is divided into districts, for each of which a district surveyor is appointed. In 1889 there were seventy-four such districts; the number is now fifty-eight, the policy of the Council having been to alter the districts as opportunities arose, so that each district should afford an income sufficient to attract the services of men of ability and character. During the year under review, the Committee dealt with 5,690 cases under the Building Act, nearly half the number relating to dangerous and neglected structures, and 7,041 new buildings were examined by the District Surveyors, for which fees amounting to over 21,000*l.* were received, being the greatest amount in fees received in one year since 1881. Nearly twice as many old buildings were examined, the fees on these amounting to nearly 20,000*l.* It has been necessary to take legal proceedings in a large number of cases, either to obtain authoritative decisions or to enforce compliance with the law. The London Government Act, 1899, considerably affected the old areas of the Local Authorities, and the areas of the districts of the District Surveyors have been rearranged so as to make them, as far as possible, coterminous with the boundaries of the Metropolitan Boroughs. In connexion with the naming of streets, 160 subsidiary and other names were abolished, and the numbers of 3,820 houses rearranged; sixty-five names for new streets were approved, and 142 streets were ordered to be renamed and renumbered. An interesting and useful book, entitled 'Names of Streets and Places in the County of London,' has been published by the Council, and has already been found of great service. During the year the Factory and Workshop Act, 1901, has come into operation. It has made but little difference in the Council's powers and duties with regard to the provision of means of escape in case of fire from factories, &c. It is true that means of escape can now be required from all floors instead of only from the floors above the ground floor as formerly, but the difficulties against which the Council has had to contend in the earlier Acts still remain. During the year 135 fresh cases have been considered by the Committee and proposals approved, or requisitions served on the owners. Of cases in which some progress was made in previous years, sixty-two have been completed and sixty-six others have been taken off the list, as after several inspections it was found that they did not within the scope of the Act. In addition, some 300 reports on proposals to provide means of escape, or to amend proposals already approved, or as to the progress of the work, have been considered by the Committee. This branch of the Committee's work necessarily calls forth considerable opposition from factory owners, but every endeavour is made to avoid unnecessary interference with the trade or manufacture carried on at the premises."

The Technical Education Board of the Council had done very good work during the year. Technical classes for artisans were carried on mainly in the ten polytechnics which were aided by the grants from the Council, but very useful work was also done in special institutions, such as the L.C.C. School of Photo-Engraving and Lithography, and the Dyeing and Tanning School at Herold's Institute, Bermondsey. The aggregate number of trade classes for artisans was 203 during the last session, as compared with ninety-seven classes eight years ago, while in the polytechnics aided by the Board the student hours worked in the principal technical subjects had increased from 118,732 eight years ago to 454,363 last year. Further developments of trade instruction were in contemplation, and arrangements had already been made for the erection of a large technical institute at Poplar, of a large building trade school at Brixton, and of a technical institute

at Sydenham, as well as a new institute in Hackney. Increasing attention was being given by the Council to the organisation of secondary education, and there was now no secondary school for London aided by the Council which was not well equipped with science laboratories.

In concluding his address, Sir John McDougall referred to the criticisms which have recently been made of municipal work, and said that such criticism was not always wise and judicious, nor was it always dictated by honest endeavour to improve where they might have fallen into error. The truth was, municipal institutions were being attacked in a way which made one think they had succeeded too well to please those of their fellow-countrymen who could not see anything good in municipal effort, but were always content to live upon the effort of private capitalists.

Protection of Buildings from Fire: Buildings in Upper Thames-street.—The Building Act Committee brought up the following report:—

"In the discharge of the duty devolving upon the Council under the Factory and Workshop Acts, we have had occasion to deal with the City Mills-buildings, which were reported to the Council by the Home Office in January, 1898. These premises are situated in Upper Thames-street, between Wheatsheaf Wharf and Puddle Dock, and abut at the rear on the river. They consist of basement and ground floors, with seven floors over. The seventh floor, is about 72 ft. above the street level." . . . . [The report here gives particulars of the work carried on and the number of people employed on the different floors. The various floors are in the occupation of several firms.] "A sealed notice was served on the owner of the premises on December 13, 1900, containing requirements for the provision of a brick enclosed incombustible staircase at the southern end of the building, connected with all floors and with Wheatsheaf Wharf at the ground level by doorways hung with fire-resisting doors, and requirements as to doors, handrails, &c., to the existing staircases at the northern end of the premises. The sealed notice was not complied with, and a difference of opinion having arisen as to the necessity of the requirements, the matter was referred to arbitration in July, 1901. The case was heard by the umpire on December 6 and 8, 1901, and his award was made on March 4, 1902. The award is to the effect that the premises are used for factory purposes, and are not provided with such means of escape in case of fire for the persons employed therein as can reasonably be required under the circumstances of the case, and further that the need of a remedy is very urgent and takes precedence of any other consideration; that the second floor is not a factory where upwards of forty persons are employed, and that, with the exception of certain portions, which are specially excepted, it is leased to Messrs. Wright & Co., only eight males being employed on the floor; that the requirements contained in the Council's sealed notice relating to the construction of an additional staircase cannot be reasonably required in the circumstances of the case, as they would involve the owner in a question of trespass on the portion of the premises occupied by Messrs. Wright & Co., but that the provision of a staircase in the position set forth in the Council's sealed notice, starting at the level of the third floor and extending up to the seventh (top) floor, and communicating with the intermediate floors between the third and seventh floors, would materially diminish the risk of injury or loss of life in case of fire breaking out in any of the upper floors of the building. The award directs that the notice served by the Council shall be amended so as to require the provision of such a staircase, and further, that the Council shall pay the owner his costs of and incidental to the reference, and also bear its own costs and the cost of the award. The award, however, makes no provision for means of escape from the first floor, which is admittedly part of the factory in the occupation of Messrs. Spiers & Pond, and from which it would be difficult to relieve the persons employed thereon from the outside in the event of their being driven to the southern end by a fire arising at the northern end, by reason of the narrowness of Wheatsheaf Wharf on the east side, and the fact that Puddle Dock extends along the west side of the premises to within about 40 ft. of the front, the premises being 220 ft. deep from front to back. The effect of providing the staircase in accordance with the award will be, in the event of a fire occurring at the north end of the building, to induce the persons employed on the four upper floors to use the new staircase, which will land them at the third floor level, and in the event of the staircase in the north-east angle of the premises, which is of step-ladder construction, being itself involved with fire, the persons descending by the staircase required by the award, will be trapped instead of escaping, and the staircase must therefore be regarded as a possible source of danger. The floors of this building are constructed of flagstones on cast-iron joists, without any protection to the stone on the underside, and in the event of a fire the stone would be expected to disintegrate and fall away, probably causing, with the load on the floor, the destruction of the floors below; moreover, the construction appears inadequate for the purposes to which the building is devoted.

Having regard to the facts that the umpire by his award has found that the whole of the premises, excepting the second floor, come within the provisions of the Acts, a point which was strongly contested by the owner, and that the requirements set forth in the Council's sealed notice are best fitted to supply the needed means of escape, it seems somewhat surprising that the Council should have been called upon to pay the costs of the owner and the costs of the award. In view of the unsatisfactory character of the award and the futility of the suggestions made for the provision of means of escape, we have given instructions for a copy of the award to be forwarded to the Secretary of State, in order that he may see the difficulties which the Council has to encounter in carrying out the provisions of the Act."

Mr. Gilbert said there were other buildings in the City like City Mills building. The facts stated in the Report showed the need of fresh legislation.

Mr. John Burns said that originally the building was in one occupation, and then no exception could be taken to it. Dr. Longstaff and the Building Act Committee were to be congratulated upon their clear Report.

Mr. Cohen asked if it was not a fact that beyond the confines of the City of London many houses originally in the occupation of one tenant were being converted into flats.

Dr. Longstaff said he did not think there was any very considerable change of this kind as to lofty buildings. The Council should bear in mind that the City Mills building was one of the worst of the kind, and that there were not many like it. As to fresh legislation, he might add that during the recess correspondence had passed between the Home Secretary and the Council, and in the course of that correspondence the Home Secretary had stated that the Building Act required amending in regard to provision against fire. They were still in communication with the Home Secretary, and at present it was not desirable to add more.

District Surveyors' Districts.—The Building Act Committee reported as follows, the recommendation being agreed to:—

"The Council, on March 4, 1902, abolished the district of West Newington, adding the eastern portion to the district of East Newington and part of St. George-the-Martyr, Southwark, and the other portions to other districts. As there is no longer a district of West Newington, it would be more convenient if the word 'East' were omitted from the designation of the district of East Newington and part of St. George-the-Martyr, Southwark, and this has in fact been done in the new list of district surveyors recently published. It is, however, necessary to obtain the Council's formal sanction to the omission, and we recommend that the district of East Newington and part of St. George-the-Martyr, Southwark, be designated 'Newington and part of St. George-the-Martyr, Southwark.'"

Streatham Fire-station.—The Fire Brigade Committee reported as follows:—

"The Council on July 29, 1902, authorised tenders to be invited by public advertisement for the erection of the proposed Streatham station, and empowered our chairman and vice-chairman to accept the lowest satisfactory tender, provided it did not substantially exceed the architect's estimate. We have now to report that in response to the advertisement five tenders were received as follows:—Messrs. Potter Bros., 10,000*l.*; Messrs. J. & C. Bowyer, 10,584*l.*; Mr. B. E. Nightingale, 10,595; Messrs. Stimpson & Co., 10,000*l.*; and Messrs. Martin, Wells, & Co., 11,438. The architect's estimate was 11,000*l.* Examination of the bills of quantities accompanying the lowest tenders revealed some clerical errors, which, on being rectified, resulted in the amount of the tender being increased by 80*l.* Messrs. Potter Bros. have recently erected for the Council the Inebriates' Home at Horley, and under the authority of the above-mentioned resolution, the firm's tender has been accepted, and, a contract having been entered into, arrangements have been made for the commencement of the work."

Proposed New Theatre at Poplar.—The Theatres and Music-halls Committee reported that they had considered plans submitted by Messrs. Owen & Ward, on behalf of Mr. Dalby Williams, of a theatre which it is proposed to erect in East India Dock-road, at the corner of Stainsby-road, Poplar. The premises will accommodate 2,119 persons. Objection was taken to the erection of the theatre by persons living in the neighbourhood, but the committee were unable to deal with such objection. It was intended, however, to use premises for dramatic entertainments, and it would be necessary, therefore, for an application to be made to the Lord Chamberlain for a licence for such purpose, and the persons objecting had been so informed. The intended name of the theatre was the Eldorado. The committee recommended that the plans be approved.

The report was adopted.

Tree-planting in the Streets.—The Improvements Committee reported that it was the usual practice of the Council when carrying out an extensive street improvement to plant trees in the new street or widened thoroughfare. This course would have been adopted in that part of Kensington High-street which was now being widened, but a petition had been received from the principal residents and shopkeepers, alleging that the planting of trees would cause interference with light and air and also damage to trade. A letter to the same effect was received from the Borough Council. Having regard to those representations, the Committee now recommended that no provision be made for the planting of trees in the thoroughfare in question.

This was agreed to.

Theatres, &c.—The Theatres and Music Halls Committee reported that the following plans were approved:—

Balham Empire.—Extra seating in the balcony, &c. Submitted by Mr. H. Percival.

Cripplegate Institute.—Alterations. Submitted by Mr. F. S. Hammond.

Elephant and Castle Theatre.—New staircase and passage. Submitted by Mr. H. V. D'Esterre.

Hackney Empire.—New pay office. Submitted by Mr. F. Matcham.

Hyde Park Hotel.—Work on ground floor. Submitted by Messrs. Lee & Pembertons.

Jack Straw's Castle, Hampstead Heath.—Saloon. Submitted by Mr. J. Clark.

King's Hall, Fulham.—Premises to occupy 300 persons. Submitted by Mr. J. P. Mobbs.

Ladbrooke Hall, W.—Seating. Submitted by Mr. M. J. Zimmermann.

Battersea Empire.—Alteration to exits. Submitted by Messrs. Mote & Son.

Bechstein Hall.—Alterations to openings in party wall. Submitted by licensee.

Camden Theatre.—Extra sanitary accommodation for stage hands. Submitted by Mr. W. G. R. Sprague.

Empress Theatre of Varieties.—Amended proposal of Alteration to stage entrance. Submitted by licensee.

Excelsior Baths.—Alteration to flooring of baths. Submitted by Mr. W. Emden.

Foresters' Music Hall.—Re-arrangement of area seating. Submitted by Messrs. Lazarus & Son.

New Cross Empire.—New converter chamber. Submitted by Mr. H. Raymond.

St. James's Hall, Piccadilly. Alteration to the Regent-street entrance. Submitted by Mr. W. Emden.

St. Pancras Baths.—Rearrangement of hydrants. Submitted by Messrs. Aldwinckle & Son.

Savoy Theatre.—Fixing of a fire-resisting screen to the proscenium opening. Submitted by Mr. A. B. Jackson.

South-Western Polytechnic, Manresa-road, Chelsea—Large hall proposed to be erected and for which application for a licence for music will be made next licensing sessions. Submitted by Mr. F. G. Knight.

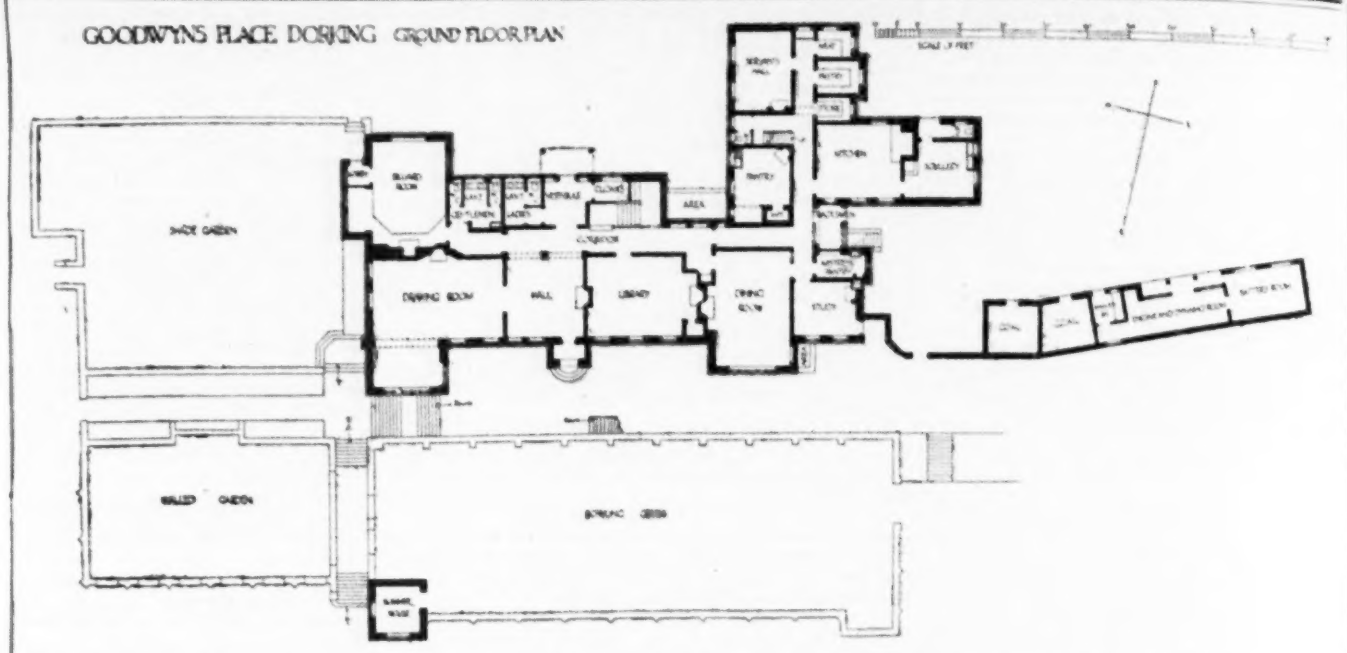
Star Music Hall.—Method of complying with requirements of detailed inspection. Submitted by Messrs. Stock, Page, & Stock.

Strand Theatre.—Removal of two boxes on dress circle level and substitution of seating. Submitted by Mr. F. T. Verity.

Willis's Restaurant.—Alteration to upper portion of premises to be used as a club. Submitted by Messrs. Wimperis & Arber.

The Council adjourned shortly after 6 o'clock.

OPERATION THEATRES, LIVERPOOL ROYAL INFIRMARY.—According to the *Liverpool Post*, a friend of this institution has undertaken the cost of the replacement, for operation purposes, of the old theatre by two new ones, and their equipment. The alterations comprise the substitution for the skylight of the old theatre of a new floor at the level of the upper corridor, leaving the previous space available as a lecture-room and for photographic work in connexion with the use of the Rontgen rays. Upon this floor two new operation rooms have been erected, with a central lobby giving access to both, and apartments on either side for the administration of anæsthetics. The theatres are lighted on three sides with a sloping skylight, 5 ft. high, from the east, and to the north the end is occupied by a large bow window, providing horizontal illumination. The walls have been lined to the height of 5 ft. with alabaster. Above that they are parian cement, coated with a white enamel paint. The electric light fittings have been installed by Messrs. Boothroyd & Co., of Bootle. The plans are those of Messrs. A. Waterhouse & Son, who designed the original building, and they have been carried out by Messrs. Morrison & Sons, of Wavertree.



GROUND-FLOOR-PLAN

"Allangate," Rustington.

Illustrations.

MARINE HOTEL, TROON.

THE hotel is situated on the famous golf-links, and faces the sea at Troon. The main building, with the three-gabled front, was built in 1897, at a cost of about 16,000*l*. The new addition, with square tower, was added in 1901, at a cost of about 10,500*l*. There are in all seventy visitors' bedrooms.

The walls are built with an outer wall of red stone and an inner wall of brick, with air space between. The main stairs are built of stone, with an oak balustrade.

The hotel is fitted throughout in a very complete, but reserved, manner. The stable, in the rear of the site, is built of brick, rough cast, and half timber work, at a cost of about 1,500*l*.

The architects are Messrs. James Salmon & Son, of Glasgow; the builders are Messrs. Muir & Son, of Kilmarnock; and the joiners' work is by Messrs. George Rome & Son, also of Kilmarnock. Mr. D. Powrie, of Glasgow, acted as clerk of works.

GOODWYNS PLACE, DORKING.

This house is built of stock bricks and plastered inside and out, all the quoins being formed of plain hand-made roofing tiles, bedded flat and bonded in with the brickwork. The main cornice of the south front is of Doulting stone.

All the floors are concrete, and the roof trusses are of steel, carrying the purlins which support the boarding on which the tiles are laid. There is a complete system of passages and flues, allowing the house to be ventilated and warmed with hot air. This heating was carried out by Messrs. Mackenzie & Moncur. All the casements are of gunmetal, and were made by Messrs. Hope, of Birmingham, who also did the lead glazing.

The house is completely lighted by electricity, which is generated on the site, the work being carried out by Messrs. Benson, of Bond-street, in consultation with Mr. Carling, of Guildford.

The plumbing was done by the North British Plumbing Co., and the general works were in the hands of Messrs. Holt, of Croydon, who carried out the work according to a schedule of prices.

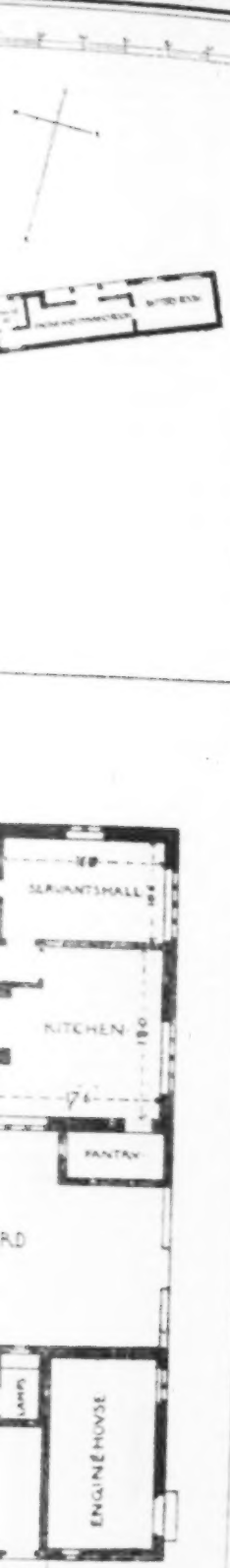
The architects were Messrs. Balfour & Turner, of London.

"ALLANGATE," RUSTINGTON, SUSSEX.

We give two views and a plan of this house, which has been erected from the designs of Mr. R. Heywood Haslam, architect, of London.

The materials are local hand-made red facing-bricks and rough-cast. The roof is covered with local hand-made tiles, and is at an angle of 50 deg. The stonework is of

MARINE HOTEL, TROON.—MESSRS. JAS. SALMON & SON



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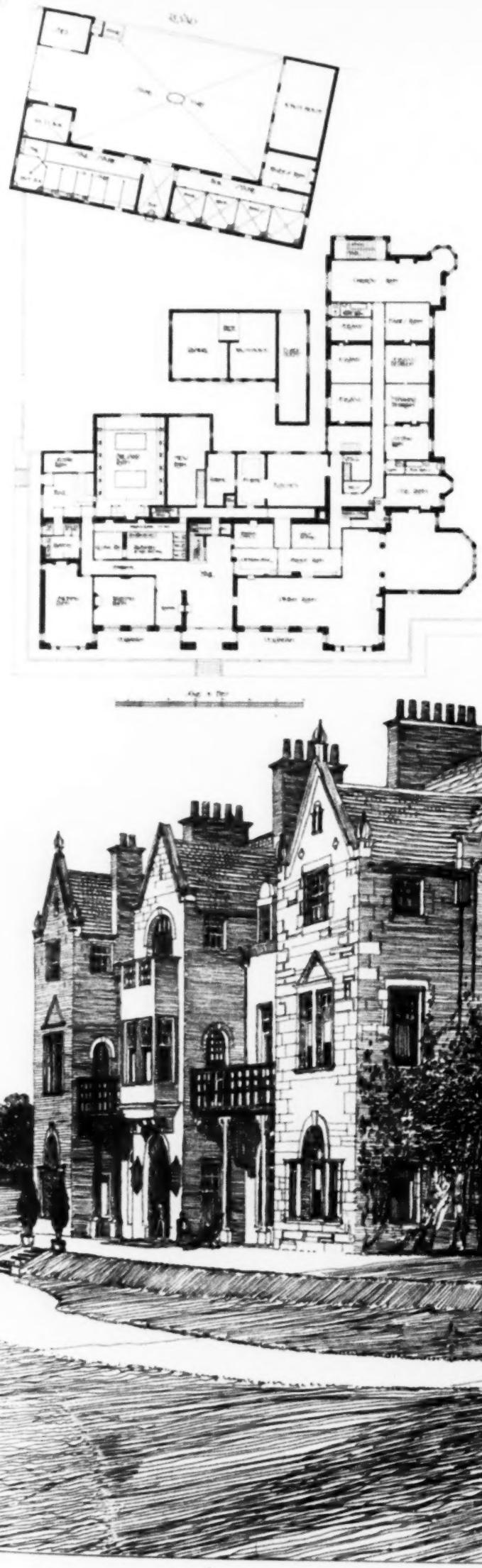
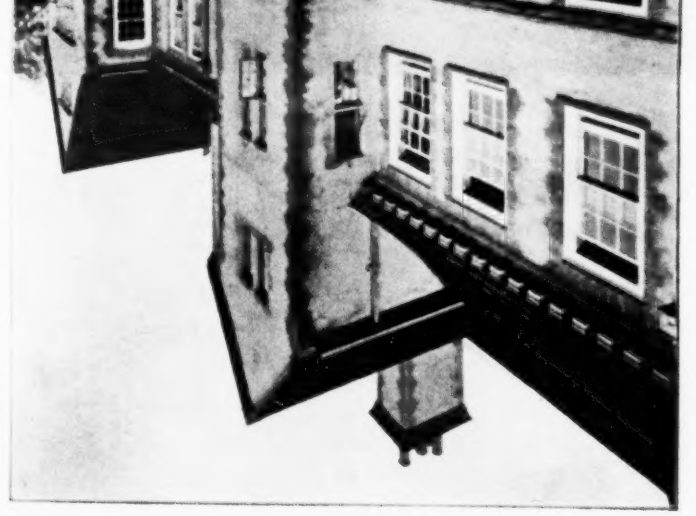


MARINE HOTEL, TROON.—Mr

PHOTO-LITHO SPRAGUE & Co. LTD. 4 & 5 EAST HARDING STREET FETTER LANE, E.C.

TROON.—MESSRS. JAS. SALMON & SON, ARCHITECTS

PART OF SOUTH FRONT.



WEST FRONT.

PART OF SOUTH FRONT.

EAST END OF SOUTH FRONT.

WEST END OF SOUTH FRONT.

PART OF NORTH FRONT.

STAIRCASE SCREEN.

Spreagne & Co., Ltd., Printers, 4 & 5 East Harding St., E.C.

GODDWYN'S PLACE, DORKING.—Messrs. Balfour & Turner, Architects.

ENTRANCE FRON

GARDEN FRON

"ALLANGATE," RUSTINGTON, SUSSEX.—Mr

TRANCE FRONT.

"INK-PHOTO" SPRAGUE & CO LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

ARDEN FRONT.

USSEX.—Mr. R. Heywood Haslam, Architect

PAINTED PANEL FOR I

Silver Medal, National Competition, 1902

[BR. PHOTO] SPRAGUE & C°LTD 4 & 5 EASTHARDING STREET FETTER LANE E.C.

NEL FOR DINING ROOM.—By Miss Annie McLeish

Doulting stone, and the floors both upstairs and downstairs are of concrete, with flooring boards nailed over them.

Messrs. Cornish & Gaymer, of North Walsham, are the builders; Messrs. Tucker & Huntley, of London, the quantity surveyors.

PAINTED PANEL FOR A DINING-ROOM.

THIS panel is one of three designs illustrating "The Blind Beggar's Daughter" ("Percy Reliques"). Its position in the room will be over the mantel, and the other two panels will be placed on the wall on each side of the chimney breast.

The painting is by Miss Annie M. McLeish, of the Mount-street School of Art, Liverpool, and gained for its author a silver medal in the national competition of this year.

ARCHITECTURAL SOCIETIES.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.—The opening meeting of the Discussion Section of the Architectural Association is to be held on Wednesday, the 15th inst., when Mr. N. F. Farwell will read a paper on "Some Recent Theories concerning Saxon and Early Norman Work in England." The following is the syllabus for the forthcoming session, which includes, as will be seen, some excellent subjects for discussion:—November 5, "The Buildings about a Farm," Mr. H. Munro Cautley; November 26, "Decorative Plaster Work," Mr. G. P. Bankhart; December 10, "Crosses," Mr. J. S. Blunt; December 17, Architectural Association Camera and Cycling Club joint meeting; January 7, 1903, "Some Points in Ancient Lights Practice," Mr. J. H. Pearson; January 28, "Poor Law Buildings," Mr. T. Norman Dinwiddy; February 11, "Gold and Silver Smiths' Work," Mr. Edward Spencer; February 25, "Valuations," Mr. W. L. Trant Brown; March 11, "Electric Lighting of a Small House" (author to be announced); April 1, "Some Unorthodox Views about Building," Mr. A. M. Watson; April 29, "A Tour in Gloucestershire," Mr. Henry Cotman.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting held at the Royal United Service Institution on Monday evening, October 6, Mr. Percy Griffith, President, in the chair, a paper was read on "The Hennebique System of Ferro-Concrete Construction," by Mr. Augustus de Rohan Galbraith. The author commenced by observing that ferro-concrete construction appeared not to be very widely known in the profession. He then sketched the early history of the system, pointing out that the first authenticated adoption of the principle was by Napoleon, in the erection of fortifications near Strasburg in Alsace-Lorraine, towards the close of the eighteenth century, and in which works hoop iron bonding in concrete was employed. He then referred to the various systems of ferro-concrete construction, stating that the originator of the principle was M. Joseph Monier, a Frenchman, and that it was first applied to the manufacture of slabs and pipes in ferro-cement. He then described the ferro-concrete system invented by M. Hennebique, a French engineer, which system has been widely introduced in practice in France, including the construction of a bridge of three arches at Chatellerault, 26 ft. 3 in. wide, and having a centre span of 172 ft. and two side spans of 135 ft. each. This system is also being adopted in this country in various engineering works—notably in connexion with the Old Quay widening and new dock works of the London and South-Western Railway Co. at Southampton. The Hennebique principle consists in embedding in concrete straight and cranked iron or steel tension bars and stirrups, to take the shearing stresses, together with distance pieces, the system being applicable to, and employed in, entire buildings from foundation to roof inclusive. The piles used at Southampton are built up in vertical moulds, in which are placed long steel rods, which give the required strength. These are laced together with wire stirrups, and Portland cement concrete of the best quality is filled into the moulds and rammed round the steel. After a month the pile is taken out of its mould and driven in position, much in the same way as timber piles are. The ram is exceptionally heavy, generally 30 cwt. The head of the pile is protected from injury by covering it with a helmet, or iron case, filled with sawdust; a timber dolly is always used. The author then pointed out the care required in the selection and preparation of the materials, explaining that the usual proportions of the concrete were 5 to 1, and giving the preference of Siemens-Martin steel to Bessemer steel owing to the purer and more uniformly good quality of the former. He then dealt with the application of the system in general construction, giving the results of some tests of Hennebique beams with and without stirrups, which proved the superior strength of the former. He then stated that the results of experiments by Professors Baushinger and Ritter showed that the adherence of iron to concrete was about 570 lbs. per square inch. The coefficient of expansion and contraction of steel and concrete was found by M. Durand Claye to be identical up to the fifth decimal, giving the breaking strain of concrete as between 3,000 and 4,000 lbs. per square inch. The advantages of the system as regards fire resistance were then illustrated by the light of some severe fire tests carried out at Ghent, together with the results of a fire which occurred at a spinning-mill at St. Etienne, Belgium, which proved that ferro-concrete structures were perfectly fireproof. The author then gave the following examples of the cost of the Hennebique system as carried out in different structures. The Chatellerault Bridge, 18*l.* 12*s.* per lineal foot; a grain warehouse at Plymouth, 4½*d.* per cube foot of space; a flour-mill at Swansea, 4¼*d.* per cube foot; grain silos at Swansea, 6¼*d.* per cube foot; and some coal hoppers at Portsmouth, 7¼*d.* per cube foot. In conclusion, the author referred to the development of the ferro-concrete system on the Continent, owing to which the French Government recently created a special department at the Ministry of Public Works to take into consideration all matters relating to that principle of construction. He observed that, although the system had not hitherto made very great headway in England, its advantages were becoming recognised and its adoption was increasing.

SANITARY INSPECTORS' ASSOCIATION:

ANNUAL MEETING.

THE annual meeting of the Sanitary Inspectors' Association was held at the Holborn Restaurant on Saturday last. Mr. W. W. Wilkinson, the Chairman of the Executive Council, presided.

The report of the Council, presented by the Chairman, recorded that the progress of the past year had been without a parallel in the history of the Association. The session practically concluded in August with the annual provincial conference held at Middlesbrough—a conference which proved to be the most successful of a long series. The recent progress of the Association had been much helped through the prestige of their President, Sir J. Crichton Browne. Through the President, the offer of a gold medal and 50*l.* had been made by the Chadwick Trust to be awarded to the member of the Association whose report to his authorities this year is considered most satisfactory and worthy. The accession of the Belfast branch of the Association had greatly strengthened them, and they had in addition received an accession of ninety-three other members to their ranks.

On the motion of the Chairman, seconded by Mr. Alexander, the report was adopted.

Mr. I. Young (Battersea) was elected Chairman of the Council, in succession to Mr. Wilkinson. The following were chosen as the new Council:—Messrs. Wilkinson, Alexander, Grigg, West, MacMahon, Strutt, Anderson, Bottomley, Dee, Brooks, Humphrey, Jacklin, Errington, Hudson, Snedley, Kemp, Skinner, Johnson, Paterson, and Terry.

The Treasurer's statement showed that 24*l.* 11*s.* 10*d.* had been carried to the capital account, in which, he added, over 3,000*l.* already stood.

The new Chairman, in returning thanks for his unopposed election, said he realised that he had been elected to the highest honour the Association could confer. His interest was their interest; therefore he asked for their support during the year.

Votes of thanks were then accorded to the retiring Chairman and to the Carpenters' Company, whose hall had been so generously placed at the disposal of the Association.

Before the meeting separated the Chairman announced that the Council had that day considered a matter of serious importance to sanitary inspectors. In a recent prosecution at the Southwark Police-court against the Metropolitan Dwellings Company in respect to defective drains, Dr. Wynter Blyth, in giving as his opinion that it was unreasonable to expect an old drain to stand the water test, stated that he was Chairman of the Council of the Sanitary Institute. In other words, the doctor laid it down that a drain which did not stand the water test might be regarded as a fit and proper sanitary arrangement to remain in a dwelling-house. This statement, from one holding such a prominent position, had so much weight with the magistrate that he dismissed the case. The Council had passed a resolution strongly protesting against this statement, and urging the Sanitary Institute to dissociate itself from any implied concurrence with this statement.

A member called attention to the fact that one of the Vestries of London some time since passed a resolution protesting against a medical officer from one district giving evidence against the officers in another.

The Chairman said it would be useless to make representations against medical officers giving evidence against sanitary officers. That was not what they complained of. Quite 95 per cent. of the members had been certified by the Sanitary Institute as competent to discharge their duties. They believed in the principles they had been taught, and they found by experience that what they did was right and proper.

The action of the Council was approved.

METROPOLITAN ASYLUMS BOARD.

THE usual meeting of this Board was held on Saturday at the offices of the Board, Thames Embankment. Mr. Hensley presided.

On the recommendation of the Works Committee the tender of Mr. J. B. Potter, of Sutton, in 11,099*l.* was accepted for the erection of a laundry at the Banstead-road school, in accordance with the plans and specifications of Messrs. Newman & Newman. The other tenderers were:—S. Page, Croydon, 11,100*l.*; R. L. Tonge, Watford, 11,157*l.*; W. Smith & Sons, Croydon, 11,528*l.*; Goddard & Sons, Farnham, 11,744*l.*; Cropley Bros., Epsom, 11,820*l.*; T. Cole, Islington, 11,388*l.*; J. Horrocks, Croydon, 11,876*l.*; Gardner & Hazell, Canonbury, 11,916*l.*; William Reason, Rosebery-avenue, 11,945*l.*; Potter Bros., Horsham, 12,138*l.*; J. R. Bex, South Croydon, 12,222*l.*

The same Committee reported that for new entrance gates, weighbridge, foundation, and road paving at the North-Eastern Hospital there were five tenders. That of Messrs. Gardner & Hazell, of Canonbury-road, N., in 198*l.* was accepted. The other tenderers were: A. T. Cattey, Lloyd-square, W.C., 210*l.*; Geo. Bell, Tottenham, N., 229*l.*; M. Webb, Stoke Newington, N., 231*l.* 2*s.* 6*d.*; F. Jones, Edmonton, 267*l.*

The Works Committee also presented a long Report on isolation accommodation at Tooting Bec Asylum. In July the Board decided to make application to the Local Government Board for their sanction to the omission of the proposed isolation accommodation in connexion with the receiving home for children at this asylum, and to the substitution therefor of an isolation block in a separate group of buildings, and directed that the plans of this separate isolation block should be transmitted to the Local Government Board for their formal sanction under seal. A letter, dated September 16, having been received in reply from the Local Government Board returning these plans, and stating that they are unable to assent to the proposal of the Managers to provide one isolation block to serve both for the adult asylum and for the receiving home, with a view to expediting matters the Committee had instructed the quantity surveyors to proceed at once with the taking out of the necessary quantities for the receiving home and stable buildings, retaining the isolation accommodation in connexion with the home.

The action of the Committee was approved.

The Ambulance Committee reported that they had had before them a copy of a memorandum by the Surveyor to the Board, stating that his revised estimate of the cost (based on the bills of quantities) of the building portion of the proposed sanitary annexes to patients' blocks at Leavesden Asylum was 2,077*l.* In addition to this sum there was an amount of 700*l.*, estimated by the Engineer to the Board, for the engineering portion of the work, which raised the total estimated cost to 3,377*l.* The cost of the work in connexion with these annexes was estimated by the Surveyor in October, 1900, at 1,429*l.*, and expenditure of this sum was sanctioned by the Local Government Board. Since then, however, expenditure of a further sum of 520*l.* for glazed brickwork has been

sanctioned, so that the total amount already sanctioned is 1,949*l.*; but the latest estimate of cost, including the engineering portion, exceeds this amount by 1,428*l.* The Committee had been in communication with the Surveyor as to the reason for this considerable increase in the estimated cost, and he stated, *inter alia*, (1) that the proposed drainage arrangements had had to be entirely revised owing to the discovery (made in the course of the progress of the general drainage alterations) that the then existing plan of the asylum drainage was inaccurate, which had entailed the provision of new drains and manholes; and (2) that there had been a considerable rise in the prices of labour and materials at Leavesden since the first estimates were prepared.

In the opinion of the Committee there could be no doubt that the approximate cost of the work was under-estimated in the first instance, but it should be borne in mind that this estimate was based on sketch plans only. They recommended that the Local Government Board be asked to assent to an additional expenditure of 1,428*l.* in connexion with the works, and this was agreed to.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

The London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

Fulham.†—Buildings on the site of Nos. 18 to 23 (inclusive), Edith-villas, Fulham (Mr. W. Cave for General James Gunter).—Consent.

Clapham.—One-story shops on part of the forecourts of Nos. 55 to 69 (odd numbers only) inclusive, Northcote-road, Battersea (Mr. A. Boon for the executors of the late J. Boon).—Consent.

Lewisham.—Seventeen two-story dwelling-houses with bay windows on the west side of Brockley Rise, northward of Honor Oak Park (Mr. A. H. Kersey for Mr. R. Kersey).—Consent.

Paddington, South.—An iron and glass shelter in front of the entrance-porch of No. 2, Craven Hill, Paddington (Mr. M. E. Collins).—Consent.

Paddington, South.—Retention of additions at the side of No. 2, Craven Hill, Paddington, abutting upon Devonshire-terrace (Messrs. Wild & Collins for Mr. M. E. Collins).—Consent.

Strand.—Retention of an iron and glass shelter at the entrances to Nos. 37 and 38, Savile-row, St. James's (Messrs. H. Poole & Co.).—Consent.

Chelsea.—A projecting wooden hood over the entrance to a house on the east side of D'Oyley-street, Chelsea, opposite Wilbraham-place (Messrs. Bourchier, Burmester, & Galsworthy for Mrs. Gordon's trustees).—Consent.

Greenwich.—Brick and wood porches to two semi-detached houses in course of erection on the north side of Shooter's Hill road, Blackheath (Mr. D. Wilson).—Consent.

Hampstead.—Projecting bay-windows to Nos. 23, 24, 25, and 26, Lyndhurst-road, Hampstead (Mr. W. A. Burr for Mr. J. Tomblin).—Consent.

Holborn.—A projecting doorway with window over to No. 44, Bedford-row, Holborn (Mr P. Hoffmann for Mr. F. Britton).—Consent.

St. George, Hanover-square.—An addition in front of No. 9, Grafton-street, Piccadilly (Mr. W. A. Large for Messrs. Matkin & Lawson).—Consent.

Brixton.—Buildings on the north side of Acre-lane, Brixton, at the corner of Brixton-road (Mr. Pavne Wyatt and Mr. C. W. Stephens for Mr. J. E. L. Clark and Messrs. Isaac Walton & Co.).—Consent.

Hampstead.†—Buildings with one story shops in front, and a porch, with bay windows over, at the flank, on the south-west side of Finchley-road, Hampstead, northward of West End-lane (Messrs. Boehmer & Gibbs for Mrs. E. J. Cave).—Consent.

Marylebone, West.—The retention of a lantern light erected on the roof of the scullery in the area on the north side of No. 12, Montague-street, St. Marylebone, abutting upon Upper George-street (Messrs. Hudson & Hunt for Messrs. W. Phillips & Son).—Refused.

Greenwich.—The retention of a wood and glass conservatory at the rear of Siebert House, Glenluce-road, Greenwich, abutting upon Westcombe-hill (Mr. E. Mills).—Refused.

Lewisham.†—The retention of a wooden porch to the entrance doorway of a house on the south side of Canonbie-road, Honor Oak Park (Messrs. Bowie & Barrett for H. Grieff).—Refused.

*Strand.**—An iron and glass shelter at the entrance to the grill room at the Grand Hotel, Charing Cross, to overhang the footway in the Strand (Mr. W. Woodward for the Gordon Hotels, Ltd.).—Refused.

City.—Balconies at the second, third, and fourth-floor levels of proposed premises for the Clerical, Medical, and General Life Assurance Society, No. 1, King William-street, City, to overhang the public way of King William-street and St. Swithin's-lane (Messrs. Dunn & Watson).—Refused.

Clapham.†—Four houses on the south side of Deauville-road, Clapham, at the corner of Rodenhurst-road (Mr. H. Bignold for Mr. Billham).—Refused.

Hammersmith.—A one-story shop on part of the forecourt of No. 10, Shepherd's Bush Green, Hammersmith (Mr. E. H. Dance for Mr. J. T. Penny).—Refused.

Hampstead.—An iron and glass projecting porch and covered way in front of No. 93, Canfield-gardens, Hampstead (Mr. J. D. Scott for Mr. A. J. Benjamin).—Refused.

Lewisham.—A one-story office building on the west side of Burnt Ash Hill, Lee, southward of the South-Eastern railway-bridge (Messrs. Knott & Davies).—Refused.

Lewisham.—A bank building on the south side of London-road, Forest Hill, at the corner of Dartmouth-road (Messrs. Tolley & Son for the London and South-Western Bank, Ltd.).—Refused.

Marylebone, East.—Projecting porches and balconies to blocks A and B, Clarence Gate-mansions, Glentworth-street, St. Marylebone (Messrs. Hudson & Hunt, for the Clarence Gate Mansions Company).—Refused.

St. George, Hanover-square.—An iron and glass hood over the entrance doorway of No. 315, Vauxhall Bridge-road, Westminster (Mr. J. Emes, for Mrs. Langel).—Refused.

Width of Way.

Camberwell, North.—Retention of a forecourt boundary in front of two houses on the north-west side of Notley-street, Camberwell, at less than the prescribed distance from the centre of the roadway of that street (Mr. H. L. Upham, for Mr. J. Moore).—Consent.

Greenwich.—That the application of Mr. J. W. Ramsay for an extension of the periods within which the erection of a one-story office building at the Thames Engineering Works, Greenwich, with the external walls of such building at less than the prescribed distance of the centre of the roadway of John Penn-street was required to be commenced, be granted.—Agreed.

City.—Warehouses on a site on the east side of Moor-lane, City, between Tenter-street and New Union-street (Mr. A. Graham for Mr. S. Margetson).—Consent.

Marylebone, West.—That the application of Mr. F. W. Hunt for an extension of the period within which the erection of buildings on the south side of Samford-street, St. Marylebone, with the forecourt boundary at less than the prescribed distance from the centre of the roadway of the street was required to be completed, be granted.—Agreed.

Hammersmith.†—The retention of a boundary-fence on the north side of a footway leading from Bridge-avenue to Mall-road, Hammersmith, at less than the prescribed distance from the centre of the roadway of such street (Messrs. Flew & Co.).—Consent.

Wandsworth.†—Re-erection of the Forester beer-house, on the north side of Allfarthing-lane, Wandsworth, with the external walls of the new building at less than the prescribed distance from the centre of the roadway of Vermont-street (Messrs. N. Parr & A. E. Kates for the Royal Brewery Co.)—Consent.

St. Pancras, East.†—A two-story workshop at the rear of No. 282, Camden-road, St. Pancras, with the external walls of such workshop at less than the prescribed distance from the centre of the roadway of Camden-mews (Messrs. J. & H. Bangs).—Refused.

Width of Way and Lines of Frontage.

Paddington, South.—An addition to a projecting porch at No. 54, Cambridge-terrace, Paddington, with the external walls at less than the prescribed distance of the centre of the roadway of Cambridge-place (Mr. J. R. McIntosh for Mr. R. F. Reynard).—Consent.

Marylebone, West.†—A one-story addition and four stone steps adjoining in front of the stables and coachhouse, No. 24, Gloucester-mews, West Marylebone (Messrs. W. H. Romaine-Walker & Besant for Mr. D. H. Leverson).—Consent.

Battersea.†—A baker's oven building at the rear of No. 122, Bridge-road, West Battersea, with the external walls at less than the prescribed distance from the centre of the roadway of Althorpe-grove (Mr. R. D. Hanson for Mr. J. C. Pocock).—Consent.

Chelsea.—An addition at the rear of No. 4, Chelsea Embankment (Mr. H. T. A. Chidgey for Major W. Evans Gordon, M.P.).—Consent.

Dulwich.—A mission church with projecting buttresses on the east side of Waghorn-street and north side of Nutbrook-street (Mr. J. W. Horsfield for the Trustees of St. John's Mission Church).—Consent.

Marylebone, West.—An addition at the rear of No. 61, Montagu-square, St. Marylebone, with the external walls at less than the prescribed distance from the centre of the roadway of Montagu-mews West (Messrs. Hudson & Hunt for Messrs. W. Phillips & Sons).—Consent.

City.—An open iron and concrete gangway across Water-street, City, to connect warehouses on the east and west sides of that street (Messrs. Cheston & Perkin for Messrs. Spicer Brothers, Ltd.).—Consent.

Lewisham.—No order with respect to the application made by Mr. J. W. Webb for consent to the erection of a house to be approached by a proposed footway out of Ravensbourne-road, Catford.—Agreed.

Brixton.†—An additional story on the one-story shops at Nos. 300 and 302, Brixton-road, Brixton, with the external wall of such addition at less than the prescribed distance from the centre of the roadway of Thornton-street (Mr. H. Bignold for Messrs. Dougharty).—Refused.

Greenwich.†—A one-story shop on part of the forecourt of No. 3, Earlswood-street, Greenwich (Mr. W. Bailey).—Refused.

Clapham.—One-story shops on the forecourts of Nos. 193, 195, Wirtemberg-street, Clapham (Mr. H. Hillier for The Auxiliary Stores, Ltd.).—Refused.

Space at Rear.

Lewisham.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of houses with shops on the site of Nos. 217-223, Lewisham High-road, with an irregular open space at the rear (Mr. F. Wheeler for Mr. R. W. Essex).—Consent.

Holborn.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a block of chambers on a site on the west side of Herbrand-street, Holborn, at the corner of Bernard-street, with an irregular open space at the rear (Mr. G. D. Martin).—Refused.

Strand.—Deviations from the plans certified by the District Surveyor, under Section 43 of the Act, so far as relates to the proposed erection of a building on the site of Nos. 1, 3, and 5, Ryder-street, St. James's (Mr. W. Woodward for Mr. C. Guifanti).—Consent.

Formation of Streets, &c.

St. George-in-the-East.—A modification of a scheme for the erection of twenty houses in Samuel-street, James-street, Langdale-street, and William-street, St. George-in-the-East, and the widening of those streets so far as relates to an increase in the widths of Samuel-street, James-street, and Langdale-street (Mr. H. H. Collins for Messrs. N. & R. Davis).—Consent.

Poplar.—That an order be issued to Mr. H. Hooper sanctioning the formation or laying out of a new street for carriage traffic to lead from East-ferry-road to Chapel House-street, Poplar (Lady Margaret Charteris).—Consent.

Brixton.—That an order be issued to Mr. W. Hunt sanctioning the formation or laying out of a new street for carriage traffic to lead from Landor-road to Hemberton-road, Stockwell, and in connexion therewith the widening of a portion of Landor-road (for Mr. W. P. Goosey).—Consent.

Woolwich.—That an order be issued to Mr. T. J. Young sanctioning the formation or laying out of a new street for carriage traffic, to lead from Abbey-grove to Abbey Wood-road, Plumstead (for Messrs. J. & C. E. Pearson).—Consent.

Poplar.—That an order be issued to Mr. H. Hooper, refusing to sanction the formation or laying out of new streets for carriage traffic out of East Ferry-road and Stebondale-street, Millwall (for Lady Margaret Charteris).—Refused.

Poplar.—That an order be issued to Mr. F. E. Duckham, refusing to sanction the formation or laying out of a street for carriage traffic out of Judkins-street, East Ferry-road, Millwall (for the Millwall Dock Co.).—Refused.

Buildings for the Supply of Electricity.

Poplar.—A building for the supply of electricity at the Island Baths, Glengall-road, Poplar, and the construction of a temporary iron enclosure at the western end of such building (Mr. H. Heckford for the Metropolitan Borough Council of Poplar).—Consent.

*** *The recommendations marked* † *are contrary to the views of the Local Authorities.*

Correspondence.

CHARING CROSS, EUSTON, AND HAMPSTEAD RAILWAY BILL.

Sir,—Will you allow us to call the attention of your readers to the fact that this Bill, which asks for powers to tunnel under the centre of Hampstead Heath, is now awaiting its third reading in the House of Commons.

We consider that the construction of a railway under the Heath will create a very bad precedent, and we fear that, notwithstanding any protective clauses that might be inserted in the Bill, the picturesqueness of the Heath will be seriously injured before many years have passed.

We call on every one of your readers who loves the Heath, to write to their Member of Parliament NOW, asking him not to agree to the route under Hampstead Heath, which route is, to put it at the lowest, absolutely unnecessary.

If the present opportunity is taken, the safety

of the Heath will be secured, but if it is lost, we fear that the victory of the commercial speculator, in this instance, will be followed by similar, or worse, attempts in the future, with fatal results to Hampstead Heath.

H. F. Pooley }
Emily Field } *Hon. Secs.*

Squire Mount, Hampstead, N.W.,
October, 1902.

HOW TO SET OUT AN ELLIPTIC ARCH.

Sir,—While giving its authors full credit for their ingenuity in showing us how to construct a true elliptical arch, I venture to object to diagram No. 2 showing "how *not* to do it" for the simple reason that it is *not*, and does not profess to be, an elliptical arch at all, but merely a three-centred one. Those who know and value the subtle grace and charm of these in French Flamboyant and other work care but little, I fancy, how they are struck, and whether they are "correct." Would that we had more of such work done now! to be judged, that is, by the *result* rather than the *method* of production. I have seen the working drawings of some able men who have successfully produced three-centred arches by the very method so strongly condemned, nor can I see anything so very illogical or unconstructional about it. Had they wished for an ellipse, in all probability it would have been forthcoming.

We sometimes see three-centred arches set out badly because the large and small curves, having failed to mitre truly, have made a cripple of the whole thing; but fig. 2 does not hint at that. An arch may be carried out in the most correct way, and do the work it has to do, and yet fail utterly to satisfy those who see it.

As has been said before, "Knowledge is frequently imparted—*feeling* rarely."

E. Swinfen Harris.

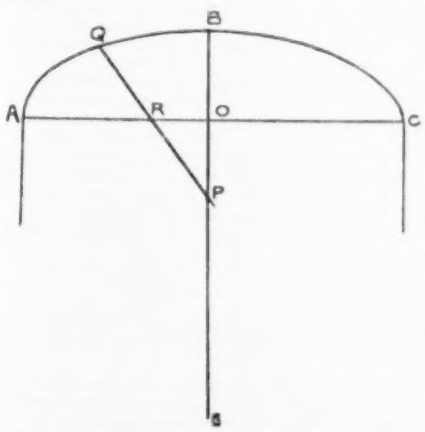
Sir,—Your correspondent (or correspondents), "Knox & Wells," cannot have had much experience in setting out elliptic arches or he would not have made some of the remarks he did in his letter, nor would he have burdened you with his method of describing a true ellipse

An architect when he wishes to have an elliptic arch knows what he wants and usually gets what he requires.

An elliptic arch is not generally made either by a collection of circles or by the aid of two centres and a piece of string; nor yet by the ingenious method suggested by your correspondent.

It is difficult to understand how Messrs. Knox & Wells can call the method of describing an ellipse with two centres and a piece of string the usual method, and yet in the same sentence say that it is not practical. It is for obvious reasons not a practical method, and therefore most unusual.

The simplest method in common use among carpenters and masons is the following, which is considerably more practical than the one suggested, for an important point in striking out an elliptic arch—in addition to obtaining a true ellipse—is to get correct radiating joints for the voussoirs of the arch, and I cannot see how these are obtained by your correspondent without resource to the two centres:—



Set out AC, the width of the arch, with O as centre and OB as the height.

Take a rod, and from one end, Q, mark out length OB in point R, and also from point Q mark out length AO in point P—*i.e.*, AO = QP and OB = QR. Nail a lath along AC, and another from O in line with OB to indefinite point S. At the points R and P on rod fix wood studs, and, using point Q, with pencil commence at A and describe the ellipse; the stud at R following along AC, and the stud at P falling down towards point S. A continuation from Q of rod QP will give radiating joints at any point in the circumference.

I will leave the proof of the correctness of my ellipse to your correspondent, and I have no doubt he will be able to produce a formula to show that my arch is not a true ellipse. That I am almost ready to grant, for, in striking the outer line of the arch, I produce Q to the point required and describe my outer ellipse as before, making the circumferences of the two ellipses equi-distant from one another throughout their length. This, I suppose, would not be possible if each were a true ellipse.

I do not claim for the method which I adopt a theoretical but an artistic and commercial value; and, as a practical method, it is far in advance of that of your correspondent.

W. P.

Sir,—A most important item was omitted by Messrs. Knox & Wells in their description how to set out an elliptic arch. The mode of procuring the intermediate joints between the springer and the crown should have been shown; it would then be most useful to many builders who are not expert geometricians.

Edward Vale.

Sir,—Referring to a letter on this subject in the *Builder*, p. 301, my sole excuse for troubling you now is my desire to protest against the cool assumption that carpenters and masons know nothing about this matter, or if they do know anything about it their knowledge is all wrong.

I have been all my life in the building trade as artisan, foreman, and clerk of works, and for about a dozen years I was almost constantly working under an architect who simply crowded his designs with semi-elliptical arches to be executed in brick and in stone, in plastering and in joinery, but although the work was done in different places by different builders I never saw any attempt made at setting the arches out in the grotesque way shown by fig. 2. In every instance the trammel was used as a matter of course. No special instructions were necessary to ensure this; it seemed to be taken for granted that when the spans and the rises were given, and the drawing showed the arches to be elliptical, the trammel was brought into use without any hesitation.

It is quite a common thing for draughtsmen to use centres for describing these arches, but that is for convenience only, and on small-scale drawings is immaterial; but in setting out full size the trammel or a lath with three nails has been the constant practice so far as my experience goes.

Clerk of Works.

Sir,—The authors of the above in your issue of 4th inst. say:—"The usual method, with two centres and a piece of string, is not practical for obvious reasons." I fail, Sir, to see why it is not practical; and, in proof of this, undertake to set out, on any paper, a set of semi-ellipses that shall compare favourably with any drawn by the method indicated in the letter referred to, with this proviso: The diameters shall be given of, say, six semi-ellipses; the curves drawn in ink. The authors to use the method shown in fig. 1, myself using string and drawing-pen. If time is a consideration, I will do the six semi-ellipses while they are doing the first one. The dimensions to be given and results judged by the Editor.

If it is thought this offer applies to drawings on paper only, it is intended here to apply in every case where the method shown in fig. 1 could be used and upon any material whatever.

R. Ramm, Bricklayer.

The Student's Column.

THE CHEMISTRY OF BUILDING MATERIALS.

15.—Tin, Bronze, Lead, White Metal, Aluminium, Antimony.

Properties of Tin.—Tin does not undergo corrosion or tarnish in the air under normal conditions. It is readily soluble in hydrochloric acid, and is attacked by dilute nitric acid. Concentrated nitric acid converts it into oxide of tin, which remains insoluble in the acid as a white powder. Tin is very malleable, but has little tensile strength. When rolled into very thin sheets the metal is known as tinfoil. Tin melts at 235 deg. C., and has a specific gravity of 7·3. Pure tin emits a characteristic crackling sound when bent, but the presence of a small proportion of lead tends to obliterate this property.

Sources of Tin.—Tin is mostly obtained from the tin oxide known as cassiterite, or tin stone, and is found principally in Cornwall, the Straits Settlements, and Australia.

Smelting Tin Ore.—The ore is mixed with coke or coal, and heated in a furnace. The carbon of the coke or coal abstracts oxygen from the tin ore, and metallic tin is obtained. The metal is subsequently remelted on the hearth of a reverberatory furnace. Tin has a lower melting point than iron and most of the other impurities, and can, therefore, be run from the furnace in a molten state, while the greater part of the impurities remain as a residue on the hearth together with a small quantity of the tin. The tin is further purified by remelting it and stirring the molten metal with a pole of green wood. The impurities form a scum on the surface, and are skimmed off.

Impurities in Tin.—The whole of the impurities present in commercial tin should not exceed 0·1 per cent. Traces of iron, copper, and lead are the impurities commonly found.

Bronze.—Bronze is an alloy of copper and tin, but modern bronze coins often also contain a small proportion of zinc. Tin and copper can be alloyed in all proportions, but as the alloy slowly changes from the molten to a solid condition, eutectic mixtures containing a large proportion of tin tend to rise to the top. This separation of eutectic alloys in a mass of molten metal is termed "liquation," and occurs more or less in most alloys. Liquation takes place to an unusual extent in most alloys of copper and tin, and large bronze castings are, in consequence, seldom uniform in composition. To a certain extent liquation may be prevented by cooling the molten alloy very rapidly.

Properties of Bronze.—Bronze does not corrode readily. It soon acquires a green coat of basic carbonate of copper when exposed to a damp atmosphere, but the corrosion is only superficial and does not gradually extend into the body of the metal as is the case when iron corrodes. Bronze is not so good a conductor of heat or electricity as copper. Bronze containing small proportions of tin is yellow, the colour getting lighter as the proportion of tin increases, until, when the tin amounts to about 30 per cent., the bronze becomes silver white. Bronze is readily destroyed by nitric acid, the copper being dissolved and the tin mostly converted into a white powder consisting of tin oxide.

Varieties of Bronze.—*Gun metal* is a bronze which usually consists of 90 per cent. of copper and 10 per cent. of tin. It is used for statuary, and was at one time largely used for the manufacture of guns. It resists corrosion by atmospheric influences, and casts well. *Bell metal* is a bronze consisting commonly of 80 per cent of copper with 20 per cent. of tin, but the proportions used by different bell-founders are not always the same, and sometimes a little silver is added to improve the tone of the bell. Lead tends to destroy the sonorousness of the metal, and must not, therefore, be present. *Coin bronze* varies considerably in composition. Old Roman coins frequently consist of 95 per cent. of copper with 4 per cent of tin, and this alloy is still commonly used for medals. Modern bronze coins usually have a composition more or less approximating to the following: copper 91 per cent., zinc 6 per cent., tin 2 per cent., and lead 1 per cent.; or copper 95 per cent., tin 4 per cent., and zinc 1 per cent.

Speculum metal is a silver-white bronze, consisting of about 67 per cent. of copper with 33 per cent. of tin, and is used for the manufacture of metallic mirrors. *Phosphor bronze* consists, according to H. J. Phillips, of 82 per cent. of copper, 13 per cent of tin, 4·3 per cent. of lead, and 0·7 per cent. of phosphorus. The small proportion of phosphorus greatly increases the strength and elasticity of the alloy. Phosphor bronze can be drawn into wire, forged, or rolled, and resists corrosion even better than ordinary bronze. *Silicon bronze* contains a small proportion of silicon instead of phosphorus, and much resembles phosphor bronze in most of its physical properties, but it conducts electricity better than either phosphor bronze or ordinary bronze, and is therefore largely used for telephone and telegraph wires. *Aluminium bronze* is not a bronze, since it contains no tin. Aluminium bronze is a golden-yellow alloy containing usually 90 per cent. of copper and 10 per cent. of aluminium. This alloy is very malleable, can be drawn into wire, and can be forged at a red heat. Plates of aluminium bronze have a tensile strength of about 40 tons per square inch. The alloy is attacked by most acids.

Manufacture of Bronze.—Tin is thrown into molten copper, and the mixture is covered with charcoal to prevent oxidation. When the tin has dissolved in the copper the mixture is well stirred. Sometimes *hard metal* is first made

by dissolving tin in twice its weight of copper, and this hard metal is subsequently added to the required proportion of molten copper.

In the case of phosphor-bronze, the bronze is made by adding either phosphor-tin or phosphor-copper to the molten alloy of copper and tin. Phosphor-tin contains about 11 per cent. of phosphorus, and is made by pouring molten tin upon phosphorus. Phosphor-copper is made in a similar manner.

Properties of Lead.—Lead exhibits a bright metallic lustre when freshly cut, but rapidly tarnishes when exposed to the atmosphere. A thin film of lead carbonate is formed on the exposed metal, but the film protects the lead from further attack, and the metal does not corrode to any considerable extent under normal conditions. Lead is soluble in nitric acid, but almost insoluble in dilute sulphuric or hydrochloric acid. It is sufficiently soluble in pure water or in rain water to cause such water when collected in lead tanks or conducted through lead pipes to cause lead poisoning in persons drinking the water. Most river waters do not dissolve lead because they contain an appreciable quantity of carbonate and sulphate of lime in solution, and may, therefore, safely be conducted through lead pipes. Lead has a low tensile strength, but is very malleable. Its specific gravity is 11·4, and its melting point 327 deg. C. At high temperatures it is to a certain extent volatile. Lead is not a good conductor of heat or electricity.

Sources of Lead.—Lead is chiefly obtained from the sulphide (PbS) known as *galena*. This ore is found in Derbyshire, Cumberland, and other places in Great Britain, and is also abundant in Spain, Germany, and the United States. In smaller quantities lead is found in the form of sulphate, carbonate, and phosphate of lead. Galena always contains a certain quantity of silver.

Smelting Lead Ores.—The galena is first roasted in contact with air in a reverberatory furnace to convert it into a mixture of sulphate and oxide of lead. The temperature is then raised until the mixture melts and the two compounds react upon one another, causing the sulphur to be evolved as gaseous sulphur dioxide, while the lead, together with the silver present in the ore, is obtained in the metallic state. Any part of the ore which has escaped reduction by this treatment is mixed with lime and again roasted and melted, and a further quantity of metallic lead is thereby obtained.

Another process for obtaining lead from galena consists in melting the ore with iron oxide or scrap iron. The iron combines with the sulphur in the galena to form iron sulphide, and the lead is left in a metallic condition.

Removing Silver from Lead.—The silver present in the galena is also reduced to the metallic condition, and forms an alloy with the lead. Until comparatively recent years the silver, which is very variable in quantity, remained in the lead, and often hardened it to a very appreciable extent. The quantity of silver in 1 ton of the lead may not be as much as 1 oz., or it may exceed ½ cwt. The silver is now usually extracted by the Parkes or zinc process, in which the lead is remelted, heated above the melting point of zinc, and then treated with about 5 per cent. of zinc. Zinc will alloy with silver, but not with lead. When the zinc is stirred into the molten lead it alloys with the silver, and, when the molten metal is allowed to cool, the zinc carrying nearly the whole of the silver with it floats to the surface and solidifies on top of the lead. The zinc is then removed and distilled in a retort. The zinc distils over and is condensed, while the silver, contaminated with a little lead, remains in the retort. The small quantity of lead is removed from the silver by remelting the impure silver on a bone-ash cupel and exposing it to a current of air. The lead oxidises to litharge, and the silver remains as an almost pure metal.

The Pattinson process for desilvering lead depends upon the fact that lead containing silver remains fluid at a lower temperature than pure lead, although the melting point of silver is much higher than that of lead. The argentiferous lead is melted and then allowed to slowly cool. The purest lead solidifies first, and is fished out by means of a perforated ladle. The portion which solidifies last is richest in silver. By repeatedly remelting the metal, and separating the portions of different melting points, the quantity of silver in the greater portion of the lead may be reduced to about ½ oz. per ton, while the silver in the smaller and richer portion may be recovered by cupellation.

Refining the Lead.—After desilvering, the lead contains small quantities of antimony, copper, zinc, and other metals which tend to harden it. These impurities are removed as completely as possible by keeping the lead in a molten condition, and exposed to the air for several hours, the metal being stirred from time to time. The impurities are oxidised, and, together with a portion of the lead which is also oxidised, form a scum on the surface of the molten metal. The scum is removed at intervals, and the molten lead is left in a comparatively fine and soft condition.

Impurities in Lead.—Commercial lead is usually a fairly pure metal, but contains traces of silver, zinc, iron, and other metals. Zinc is especially objectionable in lead to be used for sulphuric acid chambers, and lead desilverised by the Pattison process is therefore preferred for this purpose to that purified by the zinc process. The following analyses of a sample of commercial lead before and after refining have been published by Mr. H. J. Phillips :—

	Unrefined Lead.		Refined Lead.
Lead	98·550	.....	99·955
Antimony ...	1·102	.....	·006
Copper	·175	.....	·025
Iron.....	·102	.....	·004
Silver	·022	.....	·001
	99·951		99·991

Alloys of Lead and Tin.—Pewter is an alloy of 20 per cent. of lead with 80 per cent. of tin, and soft solders usually contain only lead and tin.

White metal is a name applied to several different soft, fusible, silver-white alloys. These metals are chiefly used for the bearings of machines. The metal wears smooth, does not become heated, and offers little resistance to the shaft which rotates upon it. It is sometimes termed anti-friction metal. *Babbit's metal* is a name applied by some makers to an alloy of copper and tin, while others apply it to an alloy of tin, copper, lead, and antimony. The composition may be tin 90 per cent., and copper 10 per cent.; or tin 81 per cent., copper 4 per cent., antimony 7 per cent., and lead 8 per cent.; or tin 62 per cent., lead 26 per cent., antimony 10·5 per cent., and copper 1·5 per cent.; or any other suitable [illegible] which the manufacturer chooses to describe as Babbit's metal.

Magnolia Metal is another anti-friction metal, and is said to consist mainly of lead and antimony, with traces of other metals. There are a number of other white alloys in the market known by their inventors' names, but they are mostly alloys of tin, antimony, and copper, with the addition, in some cases, of zinc.

The Properties of Aluminium.—Aluminium is a silver-like metal, having the remarkably low specific gravity of 2·6. The weight of a cubic foot of aluminium, compared with the same bulk of other abundant metals, is shown in the following table :—

	Weight per Cubic foot.
Aluminium.....	162 lbs.
Iron (cast).....	450 ,,
Zinc ,, ...	450 ,,
Tin ,, ...	456 ,,
Copper ,, ...	550 ,,
Lead ,, ...	710 ,,

When compared by weight aluminium is the most expensive of the above metals, but when compared by bulk aluminium is cheaper than copper or tin, although it still remains more costly than lead, iron, or zinc. Aluminium is readily dissolved by hydrochloric acid or by caustic soda, but is not appreciably attacked by nitric acid or organic acids such as acetic acid, or by water or moist air.

Aluminium is capable of assuming a polish, but the surface becomes dull on prolonged exposure to the atmosphere. It is not blackened by sulphuretted hydrogen, like silver, nor does it corrode like brass or iron. Aluminium is not the lightest of the metals, for magnesium and a few rare metals have even lower specific gravities.

Manufacture of Aluminium.—Aluminium is obtained from bauxite, an impure mixture of hydrated oxides of aluminium and iron. Extensive deposits of bauxite have been found in Ireland. Oxide of aluminium is extracted from the bauxite and is subjected to electrolysis in a bath of molten cryolite (a double fluoride of aluminium and sodium). As the oxide becomes reduced to metallic aluminium more oxide passes into the bath, and thus the process of manufacture is carried on continuously.

Antimony is a very brittle metal, having a bluish-white colour. It has a sp. gr. of 6·7, melts at 425 deg. C., and volatilises at a red heat. At ordinary temperatures it is not affected by exposure to the atmosphere. It is attacked by strong acids. Antimony is chiefly used as a hardening agent in alloys. It is a constituent of type metal, Britannia metal, and some forms of pewter.

BOOKS RECEIVED.

The Acts Relating to the Supply of Gas and Water. By Joseph Reeson. (Butterworth & Co.)

GENERAL BUILDING NEWS.

Church, Port Sunlight. — The foundation-stone of the new church at Port Sunlight was laid by Mrs. W. H. Lever on the 30th ult. The edifice, which will be called Christ Church, is being erected upon land adjoining Church-road. The architects for the church are Messrs. Wm. and Segar Owen, Warrington, while the construction is being carried out by Messrs. Lever Brothers' building department. We gave an illustration and description of the building in our issue for September 13 last.

Restoration of St. Andrew's Parish Church, Edinburgh.—The committee entrusted with the scheme for the restoration of St. Andrew's Parish Church have issued a statement, which recounts the history of the church and embodies the architect's scheme of restoration. It states that the plan proposed by Mr. Macgregor Chalmers is simply a restoration of the mediæval plan, so far as possible. The galleries will be removed. The side aisles will be reduced to their original height, which has recently been discovered. The pillars and arches will resume their old places and form, and on them the clearstory will be rebuilt. The so-called "Bishop's" or communion aisle will be remodelled and the corresponding one of smaller size built to the north. A new aisle will be built to the east of the Bishop's aisle. The porch shown in every plan and drawing up to and including that of 1767 will be rebuilt on its former foundations, if they can be found. The tracery of the windows and the mouldings and decorations of the doors will be in keeping with the suggestions given by these old sketches, and by contemporary churches. It is probable that there were chapels of smaller size on the west side of the north and south chapels. If the foundations of these structures are preserved two rooms to be used as a vestry and session-house will be erected in conformity with the original work. A space towards the east end of the centre aisle in the church will be reserved for the pulpit, communion table, &c., and for special seats for local corporations. Room will be provided for organ and choir. The walls will be of stone throughout. The greater part of the seats will be of oak. It has been decided that the funds raised to commemorate the late Dr. A. K. H. Boyd should be devoted to the erection of the pulpit in the restored church. The restored church will accommodate practically as many persons as the present one, allowing the same amount of room to each sitter. The estimate of the probable cost of the whole work, including all fees, is 23,375*l.*—*Edinburgh Evening Dispatch.*

Church, Stepney.—On the 4th inst. the Bishop of Stepney consecrated a new church dedicated to St. Faith, in the East End parish of Stepney. The new church, which has been built from the plans of Messrs. J. E. K. & J. P. Cutts, of London is of red brick and Bath stone, and is in the thirteenth century style. The site and the erection of the church and the parochial buildings attached have together cost the sum of 16,000*l.*

Methodist Church and Schools, Whitby.—On the 1st inst. the foundation-stones were laid for the Primitive Methodist new church and schools in Church-street, Whitby. The new church will consist of entrance vestible, two staircases to the gallery, which will seat about 200 persons, the area on the ground floor also seating the same number, making the total accommodation about 400. The church, including the recess for orchestra, will be about 55 ft. long by 34 ft. 6 in. inside. The school-room behind the church will be 51 ft. by 25 ft., and can be divided into one room 25 ft. by 25 ft. with four class-rooms 12 ft. 6 in. square, by folding screens. The builders are Messrs. J. Braim & Sons, Whitby, and the architect, Mr. W. G. Smithson, of Leeds.

Church, Tollcross, Lanarkshire.—The Victoria U.F. Church, Tollcross, has just been opened. The architect was Mr. J. Bryden, Glasgow.

Restoration of York Minster.—Next week will mark an interesting change in the restoration of the west front of York Minster, it being anticipated that the last of the stages of massively-built scaffolding which have since 1899 surrounded the north-west tower will by that time have been removed. When this is done the scaffolding will be re-erected round the south-west tower, and probably after that the great central gable of the west front will be restored. The fourth occasional report by the Dean of York on the

restoration of the Minster, just issued, gives some interesting figures as to the work carried out on the north-west tower. There have been carved 2,058 crockets, 118 birds, 62 grotesques, 61 finials, 87 gargoyles, and a number of bosses. Close upon 7,000 cubic feet of stone have been used, and the approximate weight of the new masonry will be between 400 and 500 tons. The statement of accounts shows that so far 21,182*l.* has been collected towards the restoration fund. A special fund has also been started for the protection and repair of the stained glass in the Chapter-house, which, according to the report of Mr. Grylls (London), is in a most deplorable state. The glass is very corroded and crumbling into dust, much of it being as thin as tissue paper and breaking at the slighest touch. All the decorated glass in the Minster is corroded in the same manner. The windows of the Chapter House are, however, in the worst condition, but, unless something is done to protect the outside surface from the atmosphere, before very long the nave windows will be in the same condition. The north transept "five sisters" has been protected, but the large sheets of plate glass look ugly from the outside. Mr. Grylls is of opinion that the protecting glass might be leaded in square. The cost of putting the Chapter House windows into order will certainly not be less than 500*l.*—*Newcastle Chronicle.*

TINTERN ABBEY.—The ruins of Tintern Abbey came into possession of the Crown recently on the disposal of the Beaufort Estates in Monmouthshire, and the Department of Woods and Forests is engaged in works of preservation and restoration. Mr. Waller, of Gloucester, one of the Crown architects, has the supervision of the work, and an endeavour is being made to restore old material to its original position where possible. In connexion with this object extensive excavations have been made, and portions of the ruins which long have remained hidden beneath several feet of soil have been disclosed, notably the lay brothers' quarters and the ancient watercourse made by the builders of the abbey.—*Bristol Times.*

THE HERIOT-WATT COLLEGE EXTENSIONS, EDINBURGH.—Last year the Heriot-Watt Governors, in order to provide for the extension of the College, acquired from Messrs. Raeburn, at a cost of 14,500*l.*, the old brewery buildings and ground lying between the back of the College and Cowgate. Part of the malt-houses and other buildings have now been adapted into art and other class rooms at a further cost of 8,000*l.* from designs by Mr. Anderson, Superintendent of Works. The alterations have been carried out by Mr. Colin Macandrew. The new building is entered from the Heriot-Watt College by a bridge thrown over Scott's Close. On the ground floor is a room, 50 ft. square, giving accommodation for 180 elementary students; adjoining is a lecture-room for eighty students of intermediate subjects; while there is also on this floor a large modelling-room for forty-five students, and a smaller room for casting models is also provided. On the first floor is a room capable of accommodating 150 advanced students of black and white, design, or architecture. A hall with gallery is also on this floor. From it access to the other rooms is obtained, and in it thirty students may be placed. On this floor also is a smaller room for the teaching of perspective, &c. On the second or upper floor is a room for fifty students of drawing from the life, and another for fifty students of the antique. A gallery on this floor may accommodate twenty-five students, and there is also a room capable of containing thirty-five students of painting. There is thus in the building accommodation for 685 students being taught at one time, while if the rooms are utilised at different hours the teaching of 1,500 art students could be undertaken in the building. All the rooms are lined, to nearly the wall head, with plain wood stained an art green, and the ceilings and any frieze spaces above the lining are painted white. The north gable has been pierced by twelve large windows, and several of the rooms have also a top light. As much of the work will be done at night, an installation of the electric light has been introduced. Each student will have, in the antique and life classrooms, an electric lamp at his or her bench. There is room left still between the College and the Cowgate for any further extension of the College which may be considered necessary. A new boiler-house has also been built at the back, and a tall chimney in connexion with the heating of the whole College.

SANATORIUM, DELAMERE.—The foundation-stones of the new sanatorium at Delamere have just been laid. The hospital occupies a site of seventy acres in Delamere Forest, about three miles distant from Mouldsworth, Delamere, and Frodsham, at an altitude of 450 ft. above the sea level. In addition to this building, which will have a frontage to the S.S.E. of 310 ft., and provide accommodation for ninety patients and a resident medical officer, a detached "home" for the matron, housekeeper, nurses, and servants, forms part of the scheme. There are separate buildings for the laundry and mortuary. The patients' rooms, all of which will be on the front of the building, vary in size, there being four wards for six beds each, ten for four beds, the remainder being single bedrooms. Sitting-rooms will be provided at each end for the patients of either sex. On the north side of the building on the ground floor, a dining hall will be provided, as well as a chapel seated for 120 persons. The building materials employed are Ruabon red brick and terra-cotta, the upper portions of the elevations being finished in "rough cast," and the roofs covered with red tiles. The corridors will have a dado, 4 ft. 9 in. in height, of salt-glazed bricks, the walls above being finished in granite plaster, except where, as in the turrets, kitchen, stores, &c., they are faced throughout, above the dado level, with cream enamelled bricks. The whole of the corridor floors will be of steel and concrete construction, finished in terrazzo. The windows will open down to the floor. The work in connexion with the foundations of both the main building and nurses' home is being done by Messrs. Gerrard & Sons, of Swinton, while the contractors for the superstructure are Messrs. James Hamilton & Son, of Altrincham, Mr. J. Broadbent being the resident clerk of works. The scheme is being carried out in accordance with designs prepared by Mr. W. Cecil Hardisty, architect, of Manchester.

BUILDING IN GLASGOW.—At a recent sitting of Glasgow Dean of Guild Court, Lord Dean of Guild Gourlay said:—"I have to ask you to bear with me this morning while I, very shortly, go back on the work this Court has done during the past year. I think we may claim it to be a record, for, while on two occasions have the number of linings exceeded those granted this year, the value of these has never been surpassed. Three times in thirty years has the total value of the linings been over 2,000,000*l.* This year they amount to 2,549,698*l.*, or 424,449*l.* above the highest figure hitherto reached, and that was before the extension of the city in 1875-76, and during the boom in everything which preceded the failure of the City of Glasgow Bank. Of the above linings—669 in number—197 are for dwelling-houses and shops, thirteen for public buildings, ten for churches, halls, and schools, 166 for warehouses, 244 for alterations and additions, and thirty-nine are for new streets of 11,720 yards in all, equal in length to between six and seven miles, the largest extension that has ever taken place in one year. Of the dwelling-houses, 611 are of one apartment, an increase of 234 as compared with last year, chiefly in the Eastern and St. Rollox districts; 2,420 are of two apartments; 1,527 are of three apartments. Of the three-apartment houses, more than one-half of those over the whole city are in the Queen's Park district, chiefly in Langside. This is a significant fact, and shows that with the great facilities given by our railways and electric trams, an increasing number of the well-to-do class are making their abodes in the country and suburbs. 292 are of four apartments, 143 of five, and 356 of six. The single-room houses are 11·42 per cent. of the total apartments lined; two-room, 45·24 per cent.; three-room, 28·54 per cent.; four-room, 5·45 per cent.; five-room, 2·67 per cent.; and six-room, 6·65 per cent. The districts in which the greatest amount of building is going on are Queen's Park, Maryhill, and the Eastern. The linings for houses in the first are 35·09 per cent. of the total; second, 13·38 per cent.; and third, 20·90 per cent. The value of those in Queen's Park is 660,300*l.*; Maryhill, 302,980*l.*; Eastern, 225,040*l.* These three districts represent 1,188,320*l.* of the total value of houses lined, viz.:—1,458,710*l.*, as compared with 678,574*l.* in the previous year. The value of the public buildings, churches, &c., passed by the Court this year was 1,090,988*l.*, as compared with 980,726*l.* in that preceding it. These are represented by—Public buildings, &c., 447,000*l.*; churches, halls, and schools, 63,000*l.*; warehouses, stores, and workshops, 349,000*l.*; alterations and additions, 230,000*l.* Besides ordinary applications for the erection of buildings, the Court has had during the year to deal with upwards of 100 petitions for the approval of plans of buildings of the warehouse class. Many visitations were made by the Court during the year, many of these being to inspect the site of buildings proposed to be erected in hollow squares. This is a new duty devolving upon the Court, under the Building Act of 1900, as is also the consideration and disposal of applications for the erection of hoardings or billposting stations. The Buildings Regulation Act of 1900 may not, as yet, be fully understood in all its clauses, but it has at times appeared to the Court that a little more help might have been given it by builders of great experience, their architects, and their law agents, if, in their plans, even although it involved a small money loss, they had been a little more liberal in the matter of light and air. They would be benefiting in future years the dwellers around hollow squares and well lighted back areas."

CHELTENHAM TOWN HALL.—When the old Assembly Rooms in the High-street, Cheltenham, were removed to make room for the new bank for Lloyd's, it became necessary to provide a new building in which to hold the balls and other entertainments, which had, up to that time, been given in the Assembly Rooms. The Town Council decided to erect the necessary premises on the vacant land adjoining the Winter Gardens. The main entrance (with carriage porch outside) is on the north-east side of Imperial-square, and leads into the entrance hall. At each end of this entrance hall is an octagonal inner hall, from which access is obtained to the ladies' cloak rooms, &c., on the south-east side, and to the gentlemen's cloak rooms, &c., on the north-west side; this latter side also contains a large staircase leading to the galleries above. From each of these inner halls a corridor, 12 ft. wide, runs the whole length on either side of the main hall, and these corridors give access at several points to the main hall and to various other rooms which will be used in connexion therewith, thus:—Opening out of the corridor on the south-east side of main hall are the drawing-rooms (57 ft. by 27 ft. and 26 ft. by 16 ft. 6 in.), cardroom (26 ft. by 16 ft. 6 in.), and smoking-room (21 ft. by 16 ft.), and on the north-west side the supper-room (55 ft. 6 in. by 55 ft. 6 in.), refreshment-room with service-room adjoining, and kitchen, &c., beneath. The north-west corridor connects the new town hall with the winter gardens. The main hall, which will be used for balls, concerts, &c., is 112 ft. long, 53 ft. wide, and 43 ft. high, with coved ceiling. Galleries are placed at one end over the entrance hall and along each side over the corridors, and open into the hall by a series of arched openings, these being reached by staircases at the opposite end of the building. At the other end of the main hall is the platform and orchestra with organ-chamber behind same, access to which is obtained by a separate staircase. Large storage accommodation for various purposes is provided under the floor of the main hall. Great care has been bestowed upon the planning of the buildings to make the arrangements as simple and workable as possible, and to provide ample approaches and exits. The structure is already far advanced, part being nearly roofed in. The design of the building was entrusted to Messrs. Waller & Son, architects, of Gloucester, and the estimated outlay is about 35,000*l.*

CO-OPERATIVE STORES, WOKING.—The Woking, Horsell, and District Co-operative Society, Ltd., have erected premises on a site in Church-street, opposite Percy-street, which has a frontage of 65 ft. and a depth of 130 ft. The architect was Mr. G. Pooley, of Horsell, from whose designs Messrs. H. Ingram & Son, of Woking, have erected the building.

THEATRE, ST. MARTIN'S-LANE, LONDON.—A new theatre is to be erected at the corner of St. Martin's-lane, Charing Cross. The name of the theatre is to be the Coliseum. Mr. Frank Matcham will be the architect.

SANATORIUM, BAGULEY, CHESHIRE.—The hospital for the treatment of infectious diseases built for the Withington Urban District Council has been erected at Baguley. The site of the hospital and the surrounding grounds are about twelve acres in extent and some 155 ft. above the sea level. Inside the main entrance is a porter's lodge, with a covered verandah for shelter. Opposite to the lodge is the discharge ward. Besides dressing and bath-rooms, a waiting-room has been built for friends of patients. The administration block or home contains the resident doctor's, matron's, and nurses' quarters and the committee-room. The building is in the form of three arms of a Greek cross. There are rooms for twenty-five nurses, a sickroom, and cubicles for five maidservants. Recreation, dining, and writing rooms have been provided. There is a bicycle storehouse in the basement of this block, and on the first floor level a balcony. Immediately behind this block, and connected with it by a glass-covered roof, is the kitchen and stores block. In this part of the building rooms have been provided for the servants. The accommodation in this and in the administration block is considerably in excess of what is now actually required. The main hospital road runs approximately east and west, and along this road there stand the pavilions. There are two pavilions for scarlet fever, containing fifty beds; one pavilion for diphtheria, with sixteen beds; one pavilion for enteric fever, with twenty beds; and one isolation block containing eight beds, making a total altogether of 100 beds. The scarlet-fever pavilions are at the westerly end of the site. They are two in number and two stories high; they are entered from the end, and each floor contains one ward for twelve beds, one double-bedded ward, with offices. The enteric and diphtheria pavilions face each other, the entrances are centrally placed, with wards for male and female patients on either side of the entrance hall. The isolation wards are at some little distance from the others, and consist of two two-bedded and four single-bedded wards and three separate kitchens. The floors of all the wards are of terrazzo. The walls are finished in parian cement and varnished, and the woodwork is enamelled ivory white. Heating and ventilation are obtained by ventilating hot-water radiators and ventilating stoves. All the angles in the walls and at the ceilings and floors are rounded off. The mortuary is at the easterly end of the hospital road, and there is a laundry block with a laundry, besides an electricity-generating station. Red Ruabon bricks have been used for all external walls, and terra-cotta instead of stone. The lighting throughout will be by electricity, and all the blocks are in telephonic communication with each other. The roofs are covered with green slates, with the exception of the lodge and discharge ward, near to the main entrance, where brindled tiles are used. Extensive asphalted airing grounds have been laid out near the wards for the patients, and there are tennis and croquet lawns for the officers. The water-supply is obtained from the mains of the

North Cheshire Water Company, and, as there are no public sewers, it has been necessary to treat the sewage by the septic tank process on land adjoining the site. The architect is Mr. J. B. Broadbent, of Manchester.

Library, Govan.—The Elder Library is now being erected at Govan. The buildings are to be Classic in style, and will comprise library, reading-rooms. The estimated cost of erection was about 8,000*l*. Mr. John Burnet, A.R.S.A., is the architect.

Sunday Schools, Walthamstow.—New Sunday schools at Walthamstow were opened on Saturday last for the trustees of the United Methodist Free Church. The total cost, apart from the land, is about 3,500*l*. The whole conception has been planned and designed with two main objects: One to provide ample and suitable accommodation for dealing with 800 scholars in classes, and the other to provide an assembly-hall capable of accommodating a similar number. But this is not the limit provided for. There is also an infants' class-room capable of seating 180, and a young women's classroom for another 100. Three separate assembly meetings can be going on in these buildings at one time, and practically 1,100 children can be accommodated. The cost (exclusive of land) works out at 3*l*. 3*s*. per head in assembly, and 4*l*. 7*s*. 6*d*. per head in classes. These figures include the amounts expended on caretaker's apartments with six rooms, a school kitchen, superintendent's and secretary's rooms, heating chamber, and the usual offices. The assembly-hall is adapted for public meeting purposes. The hall is lofty, well lighted, heated, and ventilated. The centre is in the form of a square, with recesses on the ground floor on three sides suitable for classroom purposes, and on the remaining side for platform purposes. On the first floor a gallery has been formed round three sides, and from off this further class-room accommodation has been provided. The width of the hall is 53 ft. and the depth 57 ft., and the height from floor to ceiling 32 ft. The gallery is separately approached by two fireproof staircases with easy-going treads. The roofing is open timbered, and carried partly on columns, which also support the gallery. The internal walling is faced with brickwork and tinted with a buff-coloured distemper. The ceilings have been plastered. A pine dado has been formed round the whole of the internal walling. The platform, over which is constructed a large semi-arch, contains a special arrangement for doubling its size, to be used for orchestral and other purposes. Incandescent gas-lighting has been adopted. The contractors for the whole of the work were Messrs. Sands, Palmer, & Co., of Walthamstow. Mr. Burley has acted as their representative. The heating arrangements were executed by Mr. E. E. Longsdon, of Rosebery-avenue, E.C.; the fireproof staircases by Messrs. Macleod & Co.; and the gas fittings by Mr. Richardson, of Walthamstow. Mr. J. Williams Dunford, of Queen Victoria-street, E.C., is the architect.

Temporary Newgate Cells.—Between the demolition of the existing Newgate and the erection of the new building it is necessary to provide a series of temporary prison cells, the construction of which has been put in the hands of the Fireproof Partition Syndicate. The cells are being made with dovetailed corrugated steel sheeting, fixed to uprights, and covered with cement, and plastered.

Extension of Paisley Reformatory.—The new wing which has been added to the reformatory has almost doubled the size of the institution. It consists of a two-story building, built of brick and rough cast on the outside face, with stone dressings. On the ground floor there is a hall, 60 ft. by 32 ft., which can be used as a gymnasium or muster-hall, as well as for entertainments. The hall is also connected with the boys' playgrounds and the old existing premises and the reading-room. A staircase leads from the ground floor to the upper floor, which comprises an additional dormitory and two new schoolrooms, divided by a sliding partition. In addition to this extension, various important improvements have also been carried out on the old premises. The back buildings of the old block have been remodelled, making a new and extended dining-hall, and converting the former schoolroom into an observation dormitory for the better classification of the boys. The extension and improvements have been carried out from plans prepared by Mr. B. A. Hamilton, architect, Paisley.

Sailors' Rest, Cardiff.—There has just been opened in Bute-road, Cardiff, the John Cory Sailors' and Soldiers' Rest. The building is in the Renaissance style, and is constructed of Bath stone. From a vestibule, swing doors give access to a hall, from which entry is obtained to the main staircase, whilst off the hall is a coffee bar. A lift is provided from this room to the kitchen on the top floor. The English hall, which is off the main hall, is arranged so that it can be divided into two halls, each with its own entrance and fireplace. A main feature of the ground floor is the floral hall, which is fitted with a glass roof, and the mosaic floor is decorated with palms and shrubs. The waiting-room is beyond the floral hall, and is reached through an arcading, and opening out of this is the games room. These two rooms can, by means of folding doors, be thrown into one large room. On the first floor the chief feature is the Scandinavian hall, which has been designed to adopt, as far as possible, the features of Scandinavian houses. In the front, on the first floor, are two large rooms devoted to the workers, which can be, if necessary, thrown into one by means of a movable partition. On this floor also are rooms devoted to the secretary, and a parlour for the use of the lady members of the committee. On the top floor there is also a bookroom, the caretaker's room, and a room for the use of the superintendent of the Rest. Provision is made for captains, officers, and engineers, one of the largest rooms in the building being devoted to their use. The builders were Messrs. Lattey & Co., the architects being Messrs. Jones, Richards, & Budgen.

Cottage Hospital, Abergavenny.—A new cottage hospital and dispensary has just been opened at Abergavenny. The new buildings, which are situate near Bailey Park, have been erected at a cost of about 1,025*l*. The building has a frontage to the Bailey Park. Accommodation is provided for nine beds in the hospital, and there is also an out-door department, comprising waiting-room, consulting-room, and dispensary. The operating room has a north light. The floor is of terrazzo marble mosaic, and the angles in the walls here, and in the wards, are all rounded in parian cement to prevent accumulation of dust, &c. Externally the building is faced with Cyfarthfa terra-cotta and Star Co.'s bricks, the roofs being of Broseley tiles. The work has been carried out by Messrs. J. G. Thomas & Sons, from the design and under the superintendence of Mr. E. A. Johnson, architect of Abergavenny and Merthyr.

New Church Schools, Harrogate.—The foundation-stone of the new Sunday schools which are being erected in connexion with St. Andrew's Church at Starbeck, Harrogate, was laid recently. Messrs. T. H. & F. Healey, of Bradford, are the architects of the building.

Claremont Hall, Pentonville, N.—On the 2nd inst. this hall, formerly Old Claremont Chapel, was reopened as a mission centre of London Congregationalism, the whole building having undergone radical alterations. The upper galleries of the chapel have been removed; new fireproof staircases constructed in lieu of two wooden ones, which were only 3 ft. in width, and which formerly gave access to two galleries; new lecture-hall, classrooms, and kitchen have been erected, and premises acquired in White Lion-street in the rear for access from that direction, and for caretaker's residence. The reconstruction has involved an expenditure of about 8,000*l*. The work has been carried out by Mr. John Greenwood, under Messrs. Barnes-Williams, Ford, & Griffin, architects, Mr. M. Brady acting as clerk of the works, and the contractors for the electric lighting being Messrs. A. W. Penrose & Co., Ltd.

SANITARY AND ENGINEERING NEWS.

International Committee of Street Hygiene.—Convened by the Chairman, Mr. H. Alfred Roechling, the International Committee of Street Hygiene met at Brussels from September 21 to 23 last to arrange for the next International Congress of Hygiene and Demography to be held in Brussels in September of next year. This Committee, which was appointed by the last International Congress at Paris in 1900, and confirmed by the Belgian Government, consists of seventeen members, representing England, America, Belgium, Holland, France, Switzerland, Germany, Austria, Hungary, Italy, Russia, Poland, Sweden, and Norway, and is charged with the study of all questions relating to street hygiene. As it became necessary to clearly define the scope of the Committee's work, to adopt, if possible, general rules to guide sanitary or local authorities when dealing with important questions relating to the cleansing of towns, and to prepare the report for next year's Congress, the Committee was convened and met at Brussels, as already mentioned, in the Salle d'Hygiene in the Belgian Ministry of Agriculture, which the Minister had kindly placed at its disposal. In two lengthy sittings the Committee discussed the material prepared by the Chairman, and adopted, with some alterations, the propositions submitted by him, which will in due course be laid before the next Congress of Hygiene and Demography. The rest of the Conference was taken up with visits of inspection to some of the works belonging to the city authorities, such as the works belonging to the Street Cleansing Department, the Sewerage Works, the Waterworks, Swimming Baths, and Morgue. During these visits the construction and maintenance of the streets were likewise examined, and another feature of considerable interest was the laying of the conduit system of electric traction near the Station du Nord. On the Quai de la Voirie the members saw a refuse destructor of twenty-four cells that has just been erected by the Horsfall Engineering Co. They expressed their thanks to Professor Putzeys, Mr. E. Putzeys, the Chief Engineer of Brussels, and Mr. Alph Smeyers, the Chief of the Cleansing Department of the city, who did all in their power to bring about the great success of the meeting.

FOREIGN.

France.—M. Redon is at present arranging the rooms in the Louvre, under the Rubens Gallery, in which will be placed the sculpture brought from Persia by M. Morgan.——A new railway line is to be made from Miramas to l'Estayne, in the outskirts of Marseilles, at an estimated cost of 30,000,000 fr.——Operations are to be carried out for the dredging of the ports of La Rochelle and La Pallice.——The church of St. Vincent, at Blois, is to be thoroughly repaired, at a cost of 115,000 fr. ——The new railway from Rodez to Carmaux was opened on Sunday last.——M. Cavel, architect, of Paris, has been commissioned to carry out a new covered market at Angoulême.——M. Bartholdi has completed the model for a monument to be erected on one of the public squares of Belfort, in memory of the three sieges which the town successively sustained.——The jury in the competition opened at Chambery for the erection of a savings bank, has awarded the first premium to M. Martin, of Grenoble.——The Municipality of Coulommiers has advertised a competition, open to all architects of the department of Seine and Marne, for a new municipal theatre for the town.——Various works are to be carried out shortly for the improvement of the Port of Havre, at a total cost of nearly three million francs. Among these is the construction of a boom 70 metres long, and a new jetty 80 metres long, extending to the site of the Frascati Baths.——M. Denys Puech has been commissioned to execute a monument to the memory of Mariette Bey, to be placed by public subscription, on a site on the banks of the Nile.——The death is announced, at the age of sixty-nine, of M. Raymond Barthélemy, the sculptor. He obtained the Grand Prix de Rome in 1860, having studied in the atelier of Duret, and obtained medals in the Salons of 1867 and 1869, and at the great exhibition of 1889. Among the various works carried out by him as commissions, either from the Government or from the Municipality of Paris, may be mentioned the "Sacré Cœur" for the church of St. Joseph; the "Presentation in the Temple" for the church of Nôtre Dame de la Croix; and the statue of Fagon which decorates the façade of the Hôtel de Ville of Paris.——The death is also announced, at the age of seventy-seven, of M. Jacques-Aristide Faure, architect, and Inspecteur des Travaux to the Department of Assistance Publique; and that of M. Franz Maestle, member of the Société Centrale des Architectes. He carried out important works in domestic architecture, and took a considerable part in drawing up the scheme of prizes offered by the Société Centrale.

Austria-Hungary.—The Hungarian Parliament met for the first time in its new house at Buda-Pest on the 8th inst. This edifice, situated on the banks of the Danube, is described as one of the most splendid piles in Europe, though much of the "marble" work in the interior is artificial. The building has taken more than fifteen years to erect and has cost a million and a half sterling. It is in the Gothic style, and the Houses of Parliament at Westminster are said to have furnished a model for it. In spite of the imposing character of the building, however, the lower house is only 82 ft. long, 75 ft. broad, and 36 ft. high; but it has double tiers of galleries, and accommodation is provided for 414 members, besides a press gallery capable of seating thirty-eight persons. The House of Magnates is of the same dimensions, and there are extensive lobbies attached to each chamber, as well as numerous reception rooms.

India.—The North-Western Railway engineering department is constructing a syphon for Rakh distributary in the Punjab for the Irrigation Department.——The Lieutenant-Governor of Burma has sanctioned the erection of new port workshops, according to the plans and estimates submitted by the Port Commissioners.——An area of nearly 3¾ acres is to be taken up in Mandalay for the extension of the municipal offices; the Rangoon municipality has also acquired about an acre of ground for additional office accommodation at the city buildings.——Works for the manufacture of armaments are about to be erected at Attock.——The Government of India has sanctioned expenditure for additional large buildings at the harness and saddle factory, Cawnpore.——A lakh of rupees is to be spent in connecting the central gun-carriage factory at Jubbulpore with the line of the East Indian Railway.

MISCELLANEOUS.

Professional and Business Announcements.—The partnership between Messrs. Wimperis & East, architects, is dissolved, Mr. East being about to leave England. Mr. Wimperis will carry on the practice, and is removing the office from 51, Conduit-street, to 6, Vigo-street, W.——Messrs. Law & Allen, architects, of Dacre House, Arundel-street, Strand, have taken into partnership Mr. Edward Shield, and the style of the firm will in future be "Law, Allen, & Shield." They are also about to open a branch office in South Africa, at Johannesburg.——Messrs. J. H. Sankey & Son, cement, brick, and slate merchants, of Essex Wharf, Canning Town, are opening a new depôt for their goods at the Midland Railway goods yard, Kentish Town.——Mr. Albert L. Guy, architect, has removed his Lewisham and London offices to 4, Verulam Buildings, Gray's Inn, W.C.

British Fire Prevention Committee Tests.—The winter session of the British Fire Prevention Committee has now commenced. Reports are being issued during this month and next on tests with armoured doors, and oak and deal doors com-

pared, as well as on Uralite doors and the Pearson fire-alarm. Testing operations will recommence at the Testing Station at Porchester-road, on October 22, with a partition by the British Uralite Co., and a heavy oak floor for warehouse purposes. The executive are occupied at their weekly meetings with the question of standardising the tests of the committee, and particulars of the results arrived at will shortly be published with the object of facilitating comparisons.

IMPROVED HOSE COUPLINGS.—Messrs. Nunan & Stove send us a description and illustration of their patent couplings for fire, deck, and garden hose. Its importance is in the case of fire hose, as the couplings, instead of the usual screw connexion, are made with a swivel connexion (somewhat on the same principle as the breech pieces of modern cannon), and are interchangeable, so that the delays which sometimes occur from bringing the wrong ends together, in the case of screw hose, are done away with; the connexion is instantaneously made, and any end on the same calibre of hose will fit any other. The coupling is fitted with a revolving neck or sleeve which enables any kink or twist in the hose to right itself automatically directly the pressure is turned on. As far as we can judge without seeing it in operation, this appears to be a really important improvement in hose connexion.

CHURCH OF ST. THOMAS À BECKET, SALISBURY.—This church, of which, as we stated in our last issue, the repair will be superintended by Mr. T. G. Jackson, R.A., was originally built in 1240 as a chapel-of-ease to the Cathedral at Salisbury. In 1403 the rectory was ceded to the Dean and Chapter as an appropriation *ad mensam*, that is, in the words of the confirmation by Pope Boniface IX., to their table in common. The tower was erected about that time, and some years afterwards the Dean and Chapter added the chancel. It is an oblong on plan, measuring 138 ft. by 71 ft. The nave arcade has four arches, 16 ft. wide, on each side, resting upon squared piers fluted at their angles and having four shafts with octagonal capitals carved with vine leaves and grape clusters. A slender shaft from each pier divides the upper wall into panelled compartments; the clear-story windows finish in a catenary arch; the nave and its aisles have roofs of oak. The arcade arches that separate the chancel from its aisles are depressed at the crown and turned upon two centres; the shafted piers and their capitals are more elaborated and later than those in the nave; the walls above are pierced on each side with six small windows, irregularly placed, of three lights with trefoil heads. The chancel was restored by Street. A window has replaced the north potch. The woodwork of the roof was wantonly painted many years ago, and the chancel screen was broken into pieces. A new stone font, with an ornamented oaken cover, was dedicated a few days ago as a memorial of the late Rev. W. J. Birkbeck, vicar: it was designed by Mr. Doran Webb.

BRADFORD MASTER BUILDERS' ASSOCIATION.—A smoking concert was held at the Bradford Building Trades and Stone Exchange on the 4th inst. The President of the Association, Alderman Holdsworth, took the chair. During an interval in the programme Mr. A. Gadie and Mrs. Gadie were the recipients of a silver tea and coffee service, suitably engraved, as an acknowledgment of the valuable services rendered by Mr. Gadie as Secretary to the Association, which post he resigned a few months ago. A silver salver was also presented to Mr. Dawson, the present Secretary, on the occasion of his marriage. The presentations were made on behalf of the members of the Association by the President, Alderman Holdsworth, who dwelt at some length on the practical manner in which Mr. Gadie had carried out his duties as Secretary. Mr. Gadie and Mr. Dawson responded.

HOUSING OF THE WORKING CLASSES.—Gainsborough-buildings, Millbank estate, have just been opened for occupation. In all seventeen blocks of dwellings have been built on the estate for the County Council, providing accommodation for 4,430 persons in two tenements of one room, 484 tenements of two rooms, 392 tenements of three rooms, sixteen tenements of four rooms, and one tenement of five rooms. The whole of the tenements in Fletcher, Sheridan, and Beaumont buildings, Duke's court site, are now fully occupied. The tenements were reserved for the persons who had been disturbed in connexion with the Clare Market scheme and Holborn to Strand improvement, and the whole of the rooms have now been occupied by persons actually displaced in connexion therewith. These persons are making, it is stated, good tenants and are paying their rent regularly, and no disturbance or damage has taken place at the buildings. The rents of the tenements were fixed 6d. per week below those that could have been obtained and are being paid at the Shelton-street dwellings. The rent of a one-room tenement is 4s., for two rooms 6s. 6d., for three rooms 8s. 6d., and for four rooms 10s. 6d., and these consequently compare favourably with the rents paid by the tenants for the same number of rooms in their old homes. In the old houses rents varying from 2s. to 6s. were paid in respect of a single room, a large number being let at 4s. and over. Two rooms were let at rents varying from 3s. to 8s. 6d., several being let at 6s. and 6s. 6d.; three rooms were let at 7s. to 10s. 6d., but in the majority of cases 9s. and over was paid. Rents varying from 9s. to 12s. were paid for four rooms. The tenements in Sheridan, Beaumont, and Fletcher buildings are all self-contained, and the accommodation afforded is far superior to that in the old houses. In seventy-one cases tenants have taken more rooms than they previously occupied, and consequently pay more rent than they did formerly. In eight cases, however, the families being small, they have been able to take a smaller number of rooms than they previously occupied; and in forty-nine cases they occupy a similar number of rooms, but with the addition in each case of a scullery. The dwellings on the Churchway Estate consist of Wellesley, Seymour, and Somerset buildings. Wellesley buildings were opened in March, 1901, and contain eighty tenements, the rents of which are 7s. 6d. and 8s. for two-room and 10s. 6s. for three-room tenements. Some little difficulty was experienced in letting a few of the tenements, but they were all let by May 13, 1901, or just two months after the first letting. Seymour Buildings, containing sixty tenements, were opened on July 21, 1902, and Somerset Buildings, containing forty tenements, on August 14, 1902. The rents in most cases are about 6d. per week lower than those in Wellesley Buildings, the rooms being smaller. Very little difficulty was experienced in letting these tenements, the majority being occupied within three weeks. The last tenement in Somerset Buildings was let on September 8, 1902, or just five weeks from the time of the opening of the buildings. As regards the tenants in occupation, 134 out of 180 came from the immediate locality of St. Pancras, 28 from St. Marylebone, and 18 from other districts.

MEMORIAL STALLS, ST. AGNES CHURCH, KENNINGTON PARK.—We have received some photographs of the carved stalls which have been erected in St. Agnes Church, Kennington, as a Queen Victoria Memorial. They are designed by Mr. Temple Moore, and executed by Mr. F. O. Green, wood carver, of Walworth. The fronts of the stalls are divided up into square panels treated with geometric tracery in varying designs, capped by a band of conventional foliage of rather flat character. The effect is very good, and, judging from the photographs, the work appears to be very well executed.

STEPNEY BOROUGH COUNCIL.—The first annual report of the Council's proceedings contains a noteworthy account of the measures that have been taken and are still in progress in respect of schemes for local improvements and for re-housing members of the labouring classes. The latter projects relate to new buildings on the King John's-court, Queen Catherine-court, and London-terrace areas, involving a net aggregate outlay of nearly 22,000*l.* for the acquisition of the land, the London County Council contributing 5,800*l.* The Borough Council will shortly undertake the laying out for public resort of a space appertaining to the churchyard of St. George-in-the-East, which was consecrated in July, 1729. Some twenty-seven years ago the former Vestry and the late Metropolitan Board of Works, and in 1885 the Metropolitan Public Gardens Association, laid out the burial ground at a cost of nearly 4,200*l.*, including 2,700*l.* for the adjacent Wesleyan graveyard.

LEGAL.

BUILDINGS IN ADVANCE OF THE BUILDING LINE.

AT the meeting of the London County Council on Tuesday, the Building Act Committee reported as follows, the recommendation being agreed to:—

"It having been reported to the Committee that the premises adjoining No. 404, Woolwich-road, at the corner of Ransom-road, were being erected in advance of the general line of buildings, proceedings were taken against the builder, Mr. Ellis, for an infringement of Section 22 of the London Building Act, 1894, with the result that the magistrate (Mr. D'Eyncourt) made orders for the demolition of so much of the buildings as was in advance of the general line. The magistrate having declined to state a case for the opinion of the High Court, Mr. Ellis applied to the Divisional Court for a *rule nisi* to the magistrate to show cause why he should not state the case. The Divisional Court declined to grant the rule, as, in the opinion of the Judges, the application was frivolous. Mr. Ellis appealed against this decision to the Court of Appeal, which Court granted him a *rule nisi* to the magistrate. On the argument of the rule, Mr. Avory, K.C., who, with Mr. Daldy, appeared on behalf of the Council, took the preliminary objection that the matter was a criminal cause or matter, and therefore the Court had no jurisdiction. The objection was upheld, and the appeal was dismissed with costs, which were duly taxed and paid by Mr. Ellis. Mr. Ellis, after some further delay, then pulled down the main portion of the unlawful buildings in advance of the general line, but almost immediately re-erected such portion on the same foundations, using much of the same materials for the purpose. Further proceedings were therefore on our instructions taken against Mr. Ellis for non-compliance with the magistrate's orders, on which the magistrate (Mr. Baggallay) convicted him, and imposed a penalty of 50*l.*, and ordered him to pay 10*l.* for costs. On the application of Mr. Ellis the magistrate agreed to state a case for the opinion of the High Court on the question of law whether or not what Mr. Ellis had done was a compliance with the magistrate's order. This case has been stated and set down for argument. We recommend—'That the solicitor be instructed to take all necessary steps to support the decision of the magistrate in the case of the Council *v.* Ellis, re No. 404, Woolwich-road, and adjoining premises.'"

AT Cheltenham Police-court on the 6th inst., Mr. W. J. Merrett was summoned, at the instance of the Charlton King's Urban District Council, for bringing forward houses which he is erecting in Copteln-road beyond the frontage line of the adjoining house. The proceedings were taken under the Public Health, Buildings, and Streets Act of 1888. Mr. George E. Brydges, Clerk to the Council, prosecuted, and Mr. Langley-Smith defended.

The case turned on the question of consent. It appeared that Mr. Merrett had submitted the plans of the houses to the Urban Council, and that these had been returned stamped with the word "Approved," and the names of the Chairmen of the Roads and Public Health Committees respectively. When, however, some progress had been made with the building operations, it was discovered that the frontage line was exceeded. Notice requiring the setting back of the building was served on Mr. Merrett, but he held to the sanctioned plans and ignored the notice.

After hearing arguments by counsel, the Bench intimated that a majority of the magistrates were of opinion that the consent given by the Council was not the consent required by the Act for extending beyond the frontage line, and they fined defendant 5*l.*, with costs. Stay of execution was granted pending an appeal.—*Birmingham Post.*

CASE UNDER THE BUILDING ACT.

AT Tuesday's meeting of the London County Council, the Building Act Committee reported as follows:—"On August 5, 1902, a building notice was served upon the District Surveyor of the intention of Mr. G. F. Havell to unite the premises, No. 5, Obelisk-buildings, Lewisham, with the adjoining premises, Nos. 1 to 4, which had already been united. The District Surveyor served a notice of objection under Section 150, against which Mr. Havell appealed. The appeal was heard before Mr. Baggallay at the Greenwich Police-court on September 10, 1902, when it was contended for the appellant that what was proposed to be done was the uniting of buildings within the meaning of Section 77 (2), and not the alteration of a building within the meaning of Section 207. Counsel for the appellant argued that as the buildings Nos. 1 to 4 had been erected and united prior to the passing of the Act of 1894 they were to be deemed to be erected or constructed in compliance with the Act of 1894 within the meaning of Section 210, and that as they were already over ten squares in area it was not by reason of the alteration, that is, the uniting of No. 5 to them, that they came within the provisions of Section 74 (2). He further stated that, treating No. 5 as an addition to Nos. 1 to 4, the appellant had made No. 5 comply with the provisions of Section 74 (2). The Council's solicitor contended on behalf of the District Surveyor that the difficulty in the case arose from confusing Section 72 with Sections 207 and 209, and that what was really proposed to be done in this case was the uniting of existing buildings in contravention of the provisions of Section 77 (2). Such buildings when united and considered as one building would not be in conformity with the Act, as they would not have in the portion known as Nos. 1 to 4 the necessary fire-resisting construction to comply with Section 74 (2). He further contended that Section 210 only protects the owner so long as he chooses to retain the building in the form in which it was erected, and that directly he united the building it would lose the protection of that section.

The magistrate upheld the objection of the District Surveyor, and, in dismissing the appeal, said, 'if the intended operation amounted only to an addition or alteration to the existing buildings, no doubt the builder's contention would be sound; but he (Mr. Baggallay) was of opinion that the real effect would be to unite the two buildings within the meaning of Section 77, Sub-Section 2, and that in that case Section 210 did not exempt him from the consequences.'"

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

11,583.—IMPROVEMENTS IN SINKS: *T. Hurst*.—In a hopper-shaped slop-sink, which is fixed against the outside of the wall of the house, the inventor contrives that the waste-pipe shall enter an upper chamber, from which an elbow-shaped passage for discharge leads to the gully or trap. The grating is fashioned in two portions, in order that the sink may be more readily cleaned.

11,584.—LIGHTNING CONDUCTORS AND THEIR ATTACHMENTS: *K. W. Hedges*.—Parallel conductors along the ridge and edges of the roof join the con-

ductors, which are arranged arch-wise to one another, and the spikes are made, in one form, upon divided clamps fastened to the conductors with eaden packing. Different methods of attachment are specified, the connexion to earth (for which see No. 19,678 of 1899) taking the conductor through a branch plugged with lead.

11,613.—Joints for Closet-pipes: *W. Thorpe.*—A spigot and socket joint for the earthenware outlet of a closet and the leaden soil-pipe consists of a metallic thimble or ferrule, of which the two portions are bolted together lengthwise. After the end of the soil-pipe has been inserted into the smaller end of the ferrule it is spread out so as to fit the socket in which the outlet-pipe is cemented or otherwise secured. In another mode the end of the outlet-pipe has an outside flange, and the mouth of the socket has an inside flange. One half of the ferrule is bolted on when the outlet-pipe has been put into the other half.

11,637.—Appliances for Drawing-boards: *J. Trimming.*—A support for a drawing-board comprises a hinged trestle having struts at its sides, which sustain a rod or tube that engages with notches cut in the back struts, and having surfaces that take pins upon a frame. An increased slope can be effected by means of the engagement of notched bars upon the frame with a cross-bar of the front struts. Recesses in the frame, which is lifted by tackle, sustain the board. Flanges on the frame guide a counterbalanced sliding frame provided with a straight-edge, and serving as a holder for instruments. The main frame is available for separate use with a transparent sheet instead of the drawing-board.

11,644.—A Cement for Making Tiles and Slabs, and Covering Purposes: *G. Harding.*—An admixture of water, magnesium chloride, pigment, calcined magnesite, and waste matter such as wood pulp, jute, cork, rope rovings, for covering various surfaces and for making tiles, slabs, and similar goods, is described as being acid, water, and fire proof, and it can be used as either a plaster or a paint.

11,651.—A Circular Saw Guard: *J. E. K. Long.*—The pressure of the wood in its advance automatically raises the shield that covers the top of the saw by lifting the lower end of a lever which turns upon a fulcrum and is joined to a chain for winding up a cord which pulls up the shield. The shield has a counter-weight. When the work has been passed forwards a suspended weight pulls up a guard, carried by a radial arm, in front of the saw. The guard is forced downwards until the wood passes over it by a hinged flap, and since the counterweight arrests the fall of the other weight the guard will not rise whilst the shield is in the lower position. If the saw-cut falls short of the top of the board the riving knife can be detached and slipped through a hole at the rear of the saw.

11,679.—Jointing for Water-closet Pipes: *W. E. Delehanty.*—An annular groove for packing is made in the discharge-leg of the closet between its tubular portion and the base-plate; the soil-pipe has a flange which is carried up to the level at least of that pipe, and it is surrounded by the floor-plate; the bevelled flange is grooved around its top and is soldered on to the soil-pipe; the base-plate is laid over the floor-plate, and screw-bolts tighten the parts together.

11,715.—Masons' Work: *C. Lorenc.*—The inventor seeks to make masonry strong enough without the use of iron in the building, and fire-proof, lasting, and free from excrescence; for a mortar having a tensile strength equal to that of the stone which is used he mixes infusorial earth, water-glass, and trass (including volcanic rocks, tufas, trachyte, and scorified lava) with sand and Portland cement, or other cements, lime, gypsum, and so on. For the sand may be substituted such substances as marble, ashes, limestone, burned clay, chalk, asbestos, fibre, &c. Before the stone is laid it is steeped in water and saturated with a solution of water-glass containing infusorial earth, and, as soon as the mortar is hard, the masonry is painted over with that solution, or with fluorides or clay. The inventor claims that his method will serve for the building in stone of hollow flat ceilings having a considerable extent of span and of self-supporting walls free from ironwork, and for making openings in main walls.

11,743.—An Appliance for Steam Cranes and Winches: *T. Scott.*—In cases where only one eccentric is adopted for both reversing and winding purposes, a lever is arranged behind the winch, and the shaft is held in plummer-blocks in order that one may lift it out upwards instead of taking it out lengthwise, the lever being joined to a sleeve which regulates the position of the eccentric by means of a helical groove and a pin. The slide-valve of the other cylinder is worked by the eccentric through a cross rock-shaft. The lever which throws the double and multiple gear both in and out is mounted in a manner similar to that described above.

11,767.—A Method of Measuring Metrical Lengths: *C. E. Johansson.*—All the measures which, for example, differ by 0·01 mm. between 1 mm. and 200 mm. may be ascertained by the combining of, in that particular instance, three series of gauge-pieces whereof one series consists of four pieces for measures of 25·00 mm., 50·00 mm., 75·00 mm., and 100·00 mm., respectively. The second series consists of forty-nine pieces for measures ranging from 1·01 mm., by a constant increase of 0·01 mm., to 1·49 mm.; and the third of forty-nine pieces for measures ranging from 0·50 mm., by a constant increase of 0·50 mm., to 24·50 mm. To the three series may be added another gauging to 0·001 mm.

11,898.—Kilns and Apparatus for Burning and Drying Bricks, &c.: *J. P. B. Fiske.*—Air which is heated in cooling the bricks and similar goods is utilised for drying them in an apparatus at the end of the kiln, over both of which travels an overhead crane; the bricks are stacked upon ribs and the parallel floors disposed cross-wise in a row, and having flues at their sides, the hot air being admitted by one flue and taken away by the other. The cells of the kiln are also disposed cross-wise in a row, with flues in the side walls; openings from one chamber to another are made through the dividing walls, and each has a flat cover for the passage of fuel, the removal of products of combustion, and abstraction of air drawn through the chambers in which the bricks are cooled. The covers are made of fireclay blocks bound together in metallic girder-frames, and can be lifted with hooks in engagement with the ends of the girder-frames.

11,917.—A Joint for the Flushing-pipes of Lavatory-basins, Closets, &c.: *W. J. Bassett.*—A joint for flushing-pipes comprises a packing-ring which is to be compressed between a recessed flange and a clip, the screwing-up being effected by means of nuts that engage with screws which are affixed to the clip.

11,928.—A Combined Tool: *P. J. E. Caron.*—The tool comprises a screw-driver and a hammer which are fashioned at the ends respectively of the handle and the jaw, and a nut and pipe wrench. The sliding jaw is provided in some instances with a vernier, and in grooves upon the opposite sides of the handle are riveted logarithmical and foot rules. The fixed and sliding jaws will serve as a calliper gauge, and may be toothed for gripping pipes; for adjustment of the latter jaw the inventor pivots on to it a lever on which is mounted a spring-pivoted pawl; as one presses the lever downwards the pawl becomes engaged with the teeth upon the jaw, which is thereupon forced forwards with a toggle movement.

11,938.—Fittings of Lavatory-basins: *A. N. Chamberlain and W. L. Hall.*—To the sides of the casing are secured guides, in which will slide the trunnions that are either attached to the basin, or, in another form, carried by the ends of two links which are pivoted on to the floor. Under normal conditions the basin reposes against the back wall, but when it is to be emptied one pulls it forwards against a stop and then turns it about the trunnions.

11,951.—A Meter for Electrical Currents: *H. Helberger.*—A continued record of current maxima is obtained in a maximum demand indicator by causing the current to flow through an expansible body or an adjacent heater, whereof the thermal expansion acts upon a marking arm, and so makes an indication upon a surface which is moved in the opposed direction by means of a ratchet contrivance that joins it to the body and at the same time prevents it from returning. In one adaptation the current through a coil heats two expansible rods which the marker joins on to three levers, one of which is pivoted at its ends to the ends of the arms respectively, and another is pivoted so as to turn upon a shaft; on the shaft is mounted a recording disc which a fixed pawl prevents from rotating in a reversed direction. A ratchet-wheel set to engage with a driving-pawl upon the lever is mounted upon the shaft.

12,000.—A Portable Folding Pontoon Bridge: *O. Nitzsch.*—The bridge, which is devised for use in bridge-building, water-surveying, and kindred operations, has floor-sections that are held up with air-bags on the outside of a tubular frame having diagonal jointed bars, of which the spreading out is controlled with chains; from the end-bars are hung cross-bars that sustain the floor-sections, and which repose upon the horizontal arms of middle diagonal bars affixed to steel tubes which join the diagonal jointed bars to one another. Forked rail-posts and tongued joints join the floor-sections together, the latter consisting of iron bars with boards between them, and having beneath them snap-rings for engagement with the hanging transverse bars.

12,069.—A Method of Glazing Skylights: *H. C. Lassam.*—A flange and wings are fashioned upon a glazing-bar which is made of lead or some suitable composition drawn in one piece upon an angle-iron core. A coating of adhesive material is applied for dressing one wing over the glass, whilst the other wing is turned over a wooden or iron rail at the end or side, and fastened with copper nails.

12,079.—Siphonical Discharge: *A. F. Woolhouse & C. E. Chrimes.*—Two crowns are provided for the siphon, a valve which is secured to the float is fitted over one of the crowns. The rising of the float will open the valve and thereby enable the confined air to escape from the crown, so as to effect an automatical discharge of the flushing-tank.

12,110.—Improvements in Tip-waggons: *E. Servais.*—The waggon is carried upon pivots set in engagement with slots cut horizontally and disposed between the positions of the centres of gravity of the waggon when it is charged and is empty; pinions, to be turned for tilting the waggon, are geared with curved racks and mounted upon guiding-pivots which fit in circular grooves at the sides; sprocket-wheels or rope tackle worked by hand turn the pinions. Provision is made for regulating the extent of the tipping with a brake, and there are safety-contrivances that maintain the waggon in an upright position.

12,173.—Means of Utilising Tidal Energy: *F. Jamison.*—Water for driving turbines or water-wheels is stored in reservoirs, which are sub-divided and communicate severally with a system of eight water-wheels that are moved in turns by the tide. At defined quarter intervals during the flowing and ebbing of the tide, certain pairs of the eight wheels are shut down, whilst other pairs are at the same time kept in motion so as to discharge water into the falling tide or into the reservoirs in succession.

MEETINGS.

Friday, October 10.

Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. J. Priestley, B.A., on "Sanitary Law." III. 7 p.m.

Saturday, October 11.

Incorporated Association of Municipal and County Engineers.—Home District meeting at Aldershot.

The Craft School (137, *Globe-road, Bethnal Green*).—Professor W. R. Lethaby on "Westminster Abbey," with lantern illustrations. 8.30 p.m.

Monday, October 13.

Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. J. Priestley, B.A., on "Duties of a Sanitary Inspector." I. 7 p.m.

Clerks of Works' Association (*Carpenters' Hall*).—Paper by Mr. John Davies on "Some Barns of the West." 8 p.m.

Tuesday, October 14.

Architectural Association.—Opening meeting of the School of Design (Elementary and Advanced) at 9, Conduit-street. Addresses by Messrs. E. S. Prior, E. Guy Dawber, and E. W. Mountford. 7 p.m.

British School at Athens.—Annual meeting of Subscribers in the rooms of the Society of Antiquaries, Burlington House. 5 p.m.

Wednesday, October 15.

Architectural Association Discussion Section.—Mr. N. F. Barwell on "Some Recent Theories Concerning Saxon and Early Norman Work in England."

London Topographical Society (*Society of Antiquaries' Rooms, Burlington House, W.*).—Annual general meeting. Chair to be taken by the Earl of Rosebery, K.G., President of the Society. 5 p.m.

Builders' Foremen and Clerks of Works' Institution.—Quarterly meeting of the members. 8 p.m.

Sanitary Institute (*Lectures and Demonstrations for Sanitary Officers*).—(1) Inspection in the district of St. Marylebone, 3 p.m.; (2) Dr. Priestley, B.A., on "Duties of a Sanitary Inspector." II. 7 p.m.

Friday, October 17.

Architectural Association.—Mr. T. R. Spence on "Homer and Architecture." 7.30 p.m.

Sanitary Institute (*Lectures for Sanitary Officers*).—Dr. J. Priestley, B.A., on "Duties of a Sanitary Inspector." III. 7 p.m.

Institution of Mechanical Engineers.—Captain C. C. Longridge on "Oil Motor Cars of 1902." 8 p.m.

Saturday, October 18.

Sanitary Institute (*Demonstrations for Sanitary Officers*).—Inspection of Disinfecting Apparatus and Model Steam Laundry, St. John's Wharf, Fulham. 2.30 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 15.—By Wilkinson, Son, & Welch (at Brighton).

Cowfold, Sussex.—The Vicarage and 8 a. 2 r. 36 p., f., p. £4,500

September 22.—By Thompson & Wood (at Great Grimsby).

Scartho, Lincs.—A freehold farm, 123 a. 0 r. 37 p. 4,950

Seven freehold building sites, 8 a. 1 r. 25 p. 873

September 23.—By Throup & Kidd (at Settle).

Malham Moor, Yorks.—Copmanhaw or Capon Hall Farm, 335 a. 3 r. 17 p., f. 4,070

September 24.—By Robert Burton (at Easingwold).

Husthwaite, Yorks.—Flower of May Farm, 172 a. 1 r. 18 p., f. and c. 8,500

By W. G. Shadrake (at Stratford).

Stratford.—15, 17, and 19, Windmill-ln., u.t. 64 yrs., g.r. 9*l.*, w.r. 109*l.* 4*s.* 900

Forest Gate.—102, Chesnut-av., f., e.r. 46*l.* 650

Bromley-by-Bow.—90, St. Leonard's-rd. (S), u.t. 23¾ yrs., g.r. 5*l.*, y.r. 49*l.* 175

September 25.—By James T. Peat (at Reigate).

Reigate, Surrey.—1, Albion-rd., f., e.r. 28*l.* 490

September 26.—By Thomas Martin & Son (at Exeter).

Colebrooke, Devon.—East Coombe Head Farm, 78 a., f., y.r. 30*l.* 620

September 27.—By Stafford & Rogers (at Bedford).

Carlton, Beds.—Pettits Farm, 113 a. 1 r. 9 p., f. 3,900

High-st., house, cottage, and 3 r. 19 p., f. 295

By Joseph Stowen (at Canterbury).

Canterbury, Kent.—Little Barton Farm, 108 a. 2 r. 18 p., f. 6,050

Pasture, arable, and market garden lands, 39 a. 3 r. 35 p., f. 1,250

Enclosure of pasture, 8 a. 3 r. 34 p., f. 750

Barton Field, 8 a. 0 r. 15 p., f. 1,150

Plot of building land, 1 a. 0 r. 33 p., f. 400

September 29.—By B. BAILEY & CO.

Anerley.—119, Marlow-rd., u.t. 74 yrs., g.r. 7*l.*, y.r. 32*l.* £240

By FISHER, STANHOPE, & DRAKE.

Stoke Newington.—98, Manor-rd., u.t. 81¼ yrs., g.r. 10*l.*, e.r. 75*l.* 855

37, Fountayne-rd., u.t. 74 yrs., g.r. 10*l.*, e.r. 65*l.* 710

45, Osbaldeston-rd., u.t. 76 yrs., g.r. 8*l.* 8s., y.r. 45*l.* 525

Stamford Hill.—36, Castlewood-rd., u.t. 68 yrs., g.r. 6*l.* 10s., e.r. 36*l.* 335

By OSBORN & MERCER.

Geldeston, Norfolk.—Dunburgh House and 8 a. 1 r. 17 p., f., p. 2,800

By J. A. TEYTHALL.

Norwood.—17 to 25 (odd), Werndee-rd., u.t. 97 yrs., g.r. 30*l.*, y.r. 154*l.* 1,160

South Kensington.—44, Sydney-st., u.t. 24½ yrs., g.r. 6*l.*, e.r. 65*l.* 430

By FRED. VARLEY & SON.

Leagrave, Beds.—Lea House and 1 a., f., p. 730

Finsbury Park.—90, Wilberforce-rd., u.t. 64 yrs., g.r. 8*l.*, e.r. 50*l.* 490

Stroud Green.—8, Carlton-rd., u.t. 74 yrs., g.r. 7*l.* 10s., e.r. 45*l.* 445

By MASON & SONS (at Great Grimsby).

Immingham, &c., Linc.—A freehold estate, 1744½ a. (in lots) 10,360

September 30.—By JOHN BOTT & SONS.

Catford.—1, Blythe Hill, u.t. 67 yrs., g.r. 7*l.* 10s., e.r. 34*l.* 215

By H. J. BROMLEY.

Forest Hill.—6, Hurstbourne-rd., u.t. 69 yrs., g.r. 8*l.*, y.r. 42*l.* 405

Norwood.—8, Arnulls-rd., f., p. 280

By FRANCIS DODD & CO.

Canonbury.—59, Leconfield-rd., u.t. 47 yrs., g.r. 5*l.* 10s., e.r. 35*l.* 330

Tottenham.—20, Ashmount-rd., f., y.r. 32*l.* 505

By WESTON & SONS.

Brixton.—5, Gordon-gr. (S), u.t. 62 yrs., g.r. 8*l.*, e.r. 40*l.* 270

By FREDERICK WARMAN.

Stoke Newington.—127, Green-lanes, u.t. 47 yrs., g.r. 15*l.*, p. 963

Highbury.—73, Highbury-quadrant, u.t. 47 yrs., g.r. 7*l.* 10s., e.r. 46*l.* 385

Canonbury.—17, Leconfield-rd., u.t. 47 yrs., g.r. 3*l.*, e.r. 40*l.* 375

By HEPPER & SONS (at Leeds).

Leeds.—6, 8, 8a, and 10, Park-lane (S), with three workshops in rear, area 318 yds., f., y.r. 245*l.* 4,100

By C. R. SMITH (at Masons' Hall Tavern).

Battersea.—St. John's-rd., the Buck's Head p.-h. and two shops adjoining; improved rental of 63*l.* for 20½ yrs., with reversion 8,000

Clapham.—Clapham Park-rd., the Oxford Arms p.-h., u.t. 37 yrs., y.r. 100*l.*, with goodwill .. 7,010

October 1.—By W. ASHMOLE.

Ilford, Essex.—Vicarage-lane, the Vicarage Building Estate, 5 a. 3 r. 16 p., f., p. 4,600

By COCKETT & HENDERSON.

Broadstairs, Kent.—1, The Broadway (S), f., y.r. 105*l.* 1,700

2, 3, and 4, The Broadway (S), f., y.r. 150*l.* 2,400

By A. PREVOST & SON.

Canning Town.—102 and 104, Rathbone-st., u.t. 46½ yrs., g.r. 4*l.* 4s., w.r. 33*l.* 16s. 190

Stepney.—78 and 80, Duckett-st., f., w.r. 36*l.* 360

By WINDRUM & CLEAVE.

Ratcliff.—59, Brook-st. (S), y.r. 52*l.* 520

Old Ford.—3 and 4, Maverton-rd., u.t. 57 yrs., g.r. 7*l.*, w.r. 62*l.* 8s. 390

By RALPH APPLETON & SON (at Stockton).

Norton, Durham.—White House Farm, 102 a. 0 r. 26 p., f., y.r. 100*l.* 3,250

By PERKINS & SONS (at Southampton).

King's Somborne, Hants.—Parnholt Wood, 475 a., f. 5,000

Bailey's Down Farm, 120¾ a., f. 800

Farley Farm, 303 a., f. 3,000

Farley School and 1 a., f. 210

October 2.—By NEWBON, EDWARDS, & SHEPHARD.

Islington.—High-st., The Grand Theatre (as a going concern), also the White Swan tavern and house and shop adjoining, u.t. 34 yrs., y.r. 2,203*l.* 16s. 8d., with five leasehold redemption policies for 27,960*l.* 10,000

Highbury.—142 and 144A, Gillespie-rd., u.t. 79 yrs., g.r. 10*l.* 10s., w.r. 62*l.* 8s. 440

Hoxton.—65, Murray-st., u.t. 40 yrs., g.r. 5*l.* 5s., y.r. 52*l.* 16s. 340

Knightsbridge.—21, Trevor-sq., u.t. 7¾ yrs., g.r. 8*l.* 10s., y.r. 45*l.* 145

Bushey, Herts.—Belmont-rd., a plot of building land, f. 250

By HARMAN BROS.

Barnsbury.—108 to 116 (even), Georges-rd., also i.g.r. 17*l.*, u.t. 68½ yrs., g.r. 47*l.*, w.r. 292*l.* 10s. 750

Clerkenwell.—Wilmington-sq., i.g.r.'s. 70*l.*, u.t. 13½ yrs., g.r. nil 570

Mile End.—Maplin-st., i.g.r.'s 21*l.*, u.t. 32½ yrs., g.r. 1*l.* 255

Canning Town.—Vincent-st., f.g.r. 14*l.*, reversion in 62½ yrs. 290

Bermondsey.—3 to 10, Pleasant-pl., f., w.r. 114*l.* 8s. 730

Islington.—1, Brooksby-st., u.t. 63 yrs., g.r. nil, e.r. 40*l.* 100

By MAY & ROWDEN.

King's Cross.—5, Percy-circus, u.t. 17½ yrs., g.r. 5*l.* 5s., y.r. 52*l.* 308

By WM. STEVENS.

Regent's Park.—37, Mornington-rd., f., e.r. 70*l.* .. 1,160

Dalston.—78, Eleanor-rd., u.t. 55 yrs., g.r. 5*l.* 5s., y.r. 34*l.* 350

Harringay.—72, Burgoyne-rd., u.t. 84½ yrs., g.r. 7*l.*, y.r. 38*l.* 425

By C. C. TAYLOR & SON.

Wapping.—14 and 15, Monza-st., f., w.r. 52*l.* 450

By WALTER VINCENT.

Hampstead.—26, Messina-av., u.t. 83 yrs., g.r. 9*l.* 10s., y.r. 30*l.* 500

By WHEELER & SON.

South Kensington.—16, Onslow-cres., p., with shop adjoining, u.t. 32½ yrs., g.r. 5*l.*, y.r. 150*l.* 3,550

By WILTSHIRE & THURGOOD.

Lewisham.—2 and 3, Lingards-rd., u.t. 57 yrs., g.r. 4*l.*, y.r. 120*l.* 1,392

Brockley.—13, Eastern-rd., u.t. 92 yrs., g.r. 6*l.* 10s., e.r. 45*l.* £505

By WORSFOLD & HAYWARD (at Dover).

Womenswould, Kent.—Woolwich Green, The Sawyers b.h., f., y.r. 19*l.* 19s. 770

Dover, Kent.—154, Snargate-st. (S), f., p. 335

164, Snargate-st. (S), f., y.r. 30*l.* 190

7, Seven Star-st., f., y.r. 18*l.* 275

October 3.—By HIBBARD & WHITTINGHAM.

Mile End.—14, 16, 18, 20, 24, and 26, Emmott-st., u.t. 68 yrs., g.r. 25*l.* 4s., w.r. 235*l.* 6s. 1,800

By A. PREECE & SON.

Shepherd's Bush.—47, Shepherd's Bush-rd., u.t. 65½ yrs., g.r. 9*l.*, y.r. 42*l.* 390

Paddington.—31, Amberley-rd., u.t. 60 yrs., g.r. 6*l.*, y.r. 50*l.* 540

Westbourne Park.—39 and 41, St. Ervan's-rd., u.t. 64 yrs., g.r. 15*l.*, y.r. 82*l.* 645

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; w.r. for weekly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	2 13 0	per 1,000 alongside, in river
Rough Stocks and Grizzles	2 10 0	" " "
Facing Stocks	2 12 0	" " "
Shippers	2 5 0	" " "
Flettons	1 8 0	" at railway depôt
Red Wire Cuts	1 12 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	3 5 0	" " "
Best Blue Pressed Staffordshire	4 5 0	" " "
Do., Bullnose	4 11 0	" " "
Best Stourbridge Fire Bricks	4 8 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamfered, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamfered, Squints	14 0 0	" " "
Seconds Quality White and Dipped Salt Glazed	2 0 0	" less than best.
Thames and Pit Sand	7	0 per yard, delivered.
Thames Ballast	6	0 " "
Best Portland Cement	31	0 per ton, delivered.
Best Ground Blue Lias Lime	22	0 " "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 10s. 6d. per yard, delivered.

Stourbridge Fire-clay in sacks, 27s. od. per ton at rly. dpt.

STONE.

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depot
Bath "	1 7	" "
Farleigh Down Bath	1 8	" "
Beer in blocks	1 6	" "
Grinshill "	1 10	" "
Brown Portland in blocks	1 2	" "
Darley Dale in blocks	1 4	" "
Red Corsehill "	1 5	" "
Closeburn Red Freestone	1 1½	" "
Red Mansfield "	1 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per foot super. "
6 in. Rubbed two sides Ditto, Ditto	2 6	" "
3 in. Sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. Sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
BEST HARD YORK—		
Scappled random blocks	3 0	per ft. cube "
6 in. sawn two sides, landings to sizes (under 40 ft. sup.)	2 8	per ft. super. "
6 in. Rubbed two sides Ditto	3 0	" "

PRICES CURRENT (*Continued*).

STONE.

	s. d.	
3 in. sawn two sides slabs (random sizes)	1 2	per ft. super. deld. rly. depot.
2 in. self-faced random flags	0 5	" "
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube. deld. rly. depôt
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. do.	1 2½	" "

SLATES.

in.	in.	£ s. d.	
20 × 10	best blue Bangor	12 5 0	per 1000 of 1200 at rly. dep.
20 × 12	" " "	13 5 0	" "
20 × 10	best seconds "	11 15 0	" "
20 × 12	" " "	12 17 6	" "
16 × 8	best "	6 17 6	" "
20 × 10	best blue Portmadoc	11 7 6	" "
16 × 8	best blue Portmadoc	6 5 0	" "
20 × 10	best Eureka unfading green	15 0 0	" "
20 × 12	" "	16 10 0	" "
18 × 10	" "	11 10 0	" "
16 × 8	" "	7 10 0	" "
20 × 10	permanent green	10 10 0	" "
18 × 10	" "	9 0 0	" "
16 × 8	" "	6 5 0	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1,000, at rly. depôt.
Hip and valley tiles	3 7	per doz. " "
Best Broseley tiles	50 0	per 1,000 " "
Do. Ornamental tiles	52 6	" " "
Hip and valley tiles	4 0	per doz. " "
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 " "
Do. ornamental Do.	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3	" " "
Best Red or Mottled Staffordshire Do. (Peakes)	51 0	per 1,000 " "
Do. Ornamental Do.	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 10 0	16 10 0
Deals: best 3 by 9	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	9 10 0
2 in. by 4½ in. and 2 in by 5 in.	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0
JOINERS' WOOD.	At per standard.	
White Sea: First yellow deals, 3 in. by 11 in.	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
" " 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:— First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals 3 in. by 11 in.	13 10 0	14 10 0
" " " 3 in. by 9 in.	12 10 0	13 10 0
" " " battens	9 10 0	10 10 0
Pitch-pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	33 0 0	upwards.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—Large, per ft. cube	0 2 6	0 3 0
Small "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¾ in. do. do.	0 0 6½	" " "
Dry Mahogany— Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0

[See also page 333.

COMPETITIONS, CONTRACTS AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
*Overseer or Inspector of Waterworks	Hong Kong Government	210*l.*, &c	Oct. 20
*Building Inspector	Willesden District Council	150*l.*	Oct. 21
Tenements	Hamilton (N.B.) Town Council	15*l.* 15*s.*, 10*l.* 10*s.*, and 5*l.* 5*s.*	Oct. 25
*Designs for Town Hall, Library, &c.	Durban (Natal) Corporation	500*l.*, 300*l.*, and 200*l.*	Dec. 18
*Designs for Extension of Town Hall	Hull Corporation	300*l.*, 200*l.*, 100*l.*	Jan. 31
Designs for University Buildings, Cape of Good Hope	Agnt.-Gen. for Cape of Good Hope	400*l.*, 200*l.*, 100*l.*	do.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Underground Convenience, Roath	Cardiff Corporation	W. Harper, Civil Engineer, Town Hall, Cardiff	Oct. 13
Granite Kerb	Brighton Town Council	F. J. C. May, Civil Engineer, Town Hall, Brighton	Oct. 14
*Road-making & Paving Wks., Back-lane, Cricklewood	Willesden District Council	Council's Engineer, Public Offices, Dyne-road, Kilburn, N.W.	do.
Four Houses	Cwmaman Cottage Company, Ltd.	Smith & Davies, Architects, Aberdare	do.
Two Cottages	do.	do.	do.
Weaving Shed, Honley, near Huddersfield	Messrs. Eastwood Bros., Ltd.	J. Berry, Architect, 3, Market-place, Huddersfield	do.
Stone Wall, &c., Macclesfield	Technical Instruction Committee	E. E. Adshead, Borough Engineer, Macclesfield	do.
Retaining Wall, Haywood's Quarry, Deepcar	Stockbridge U.D.C.	Fowler & Marshall, Engineers, Hartshead, Sheffield	do.
Sewerage Works	Felixstowe U.D.C.	F. B. Jennings, Town Hall, Felixstowe	do.
Sanatorium, Eastby, near Skipton	The Guardians	F. Holland, Engineer, Hustlergate, Bradford	do.
Street Works	Rawtenstall Corporation	A. W. Lawson, Civil Engineer, Municipal Offices, Rawtenstall	Oct. 15
Road Works, King Edward-avenue, Shirley	County of Hants Land Soc., Ltd.	W. B. Hill, Surveyor, 31, Above-bar, Southampton	do.
Broken Granite	Ware U.D.C.	G. H. Gisby, Town Hall, Ware	do.
Water Supply Works	Witney (Oxon) U.D.C.	G. Winship, Civil Engineer, Borough Buildings, Abingdon	do.
Sewers, &c., Bury-street	Rochdale Town Council	S. S. Platt, Civil Engineer, Town Hall, Rochdale	do.
Sewers, &c., Lee-road	Aldeburgh (Suffolk) Town Council	J. C. Gordon, Borough Surveyor, Aldeburgh	do.
Sewers, &c., Compton Giffard	Plympton St. Mary R.D.C.	P. H. Worth, Engineer, 42, George-street, Plymouth	do.
Schools, near Stratford-on-Avon	Pedworth School Board	Harvey Bros., Architects, 30, King's-road, Evesham	do.
Smithy, Nottingham-road	Derby Corporation	J. Ward, Civil Engineer, Babington-lane, Derby	do.
Shed, &c., at Antwerp Mills, Armley	Uxbridge R.D.C.	C. S. Nelson, Architect, 15, Park-row, Leeds	Oct. 16
Sewers, &c., Ruislip, Middlesex	Wesleyans	J. F. Stow, Engineer, Corn Exchange, Uxbridge	do.
Reseating Chapel, Canketgate, Lincoln	Mr. E. Gallagher	W. Mortimer & Son, Architects, Lincoln	do.
Addition to Houses, Fahan-street, Londonderry		J. P. M'Grath, Architect, 25, Carlisle-street, Londonderry	do.
Two Houses, York-road, Great Yarmouth		C. G. Baker, Architect, Town Hall Chambers, Great Yarmouth	Oct. 17
Bakery, Mile Cross, Halifax	Preston Corporation	M. Hall, Architect, 29, Northgate, Halifax	do.
Paving Works, Rutland-street	Millstreet R.D.C.	Borough Surveyor, Town Hall, Preston	do.
Sewer, Knocknagree, Ireland		T. M. O'Connor, Workhouse, Millstreet	do.
House, Five Roads, Llanelly	Wakefield Guardians	W. Bennett, Ystodwen Farm, Five Roads, near Llanelly	Oct. 18
Electricity Works at Workhouse	Glamorgan County Council	H. Beaumont, Tetley House, Wakefield	do
Additions to Police Station, Porthcawl	Mrs. Coward	T. M. Franklen, Council Offices, Cardiff	do.
Villa, Coniston	Manchester Corporation	J. Bell, Architect, Coniston	do.
Granite Setts (10,000 tons)	Brierley Hill U.D.C.	J. M'Elroy, 55, Piccadilly, Manchester	do.
Technical School and Library	Bury (Lancs) Corporation	J. L. Harper, Town Surveyor, Town Hall, Brierley Hill	do.
Stone Walls, Clow Bridge	Governors	J. Haslam, Bank-street, Bury	do.
Additions to Schools, Globe Pottery, Cobridge, Staffs	Belfast Police Committee	A. Price, Architect, Sandbach	do.
Fire Station, Ardoyne	Bury (Lancs) Corporation	Young & Mackenzie, Civil Engineers, Belfast	Oct. 19
Water Supply Works, Ogden Brook	Borough of Betmondsey	J. Cartwright, Civil Engineer, Peel Chambers, Bury	Oct. 20
Heating Town Hall	Hindley (Lancs) U.D.C.	Borough Surveyor, Town Hall, Spa-road, S.E.	do.
Sewers, Alder-lane	Bridlington Corporation	A. Holden, Civil Engineer, Council Offices, Hindley	do.
Lavatories, South Cliff-road	Barby (Yorks) Water Company	Borough Surveyor, Town Hall, Bridlington	do.
Reservoir	St. Marylebone Borough Council	H. A. Johnson, Civil Engineer, 15, The Exchange, Bradford	do.
Swedish Deal Paving Blocks	Brentford U.D.C.	Council's Surveyor, Town Hall, Marylebone-lane, W.	do.
Supply of Broken Granite	Carmarthenshire County Council	Council's Surveyor, Clifden House, Boston-road, Brentford	Oct. 21
Bridge Works, Longhor	Abercarn U.D.C.	J. W. Nicholas, County Offices, Carmarthen	do.
Twenty-eight Houses, Newbridge, Mon.	Kilkenny Corporation	G. Stevens, Surveyor, Council's Offices, Abercarn	do.
Waterworks	Brandon (Suffolk) R.D.C.	A. M. Burden, Civil Engineer, Kilkenny	do.
Sinking a Well	L. & Y. Railway Co.	H. Walker & Son, Engineers, King-street, Nottingham	do.
Bridge Works, Burnley	Bradford Guardians	E. C. Irwin, Hunt's Bank, Manchester	do.
Taking Down Chimney	South Dublin R.D.C.	F. Holland, Engineer, 11, Parkinson's-chambers, Bradford	Oct. 22
Eighty-four Cottages	Committee	T. J. Byrne, Architect, 1, James's-street, Dublin	do.
Boiler House at Laundry, Carmarthen	Greenwich Union	E. W. Reed, County Asylum, Carmarthen	Oct. 23
School Rooms at Sidcup	Admiralty	T. Dinwiddy & Sons, 12, Croom's Hill, Greenwich	do.
New Coast Guard Buildings, near Dover	Brigg (Lincs) U.D.C.	Director of Works Department Admiralty, W.C.	Oct. 24
Sewers, &c.	Johannesburg Municipality	E. S. W. Berrington, Engineer, 25, Victoria-street, Westminster	do.
Refuse Destructors, &c.	Beckenham U.D.C.	E. W. Carring & Co., Agents, 84, Dunstan's Hill, E.C.	Oct. 27
Timber Platform over Swimming Bath	Brentford Union	Council's Surveyor, U.D.C. Offices, Beckenham	do.
New Vagrant Wards at Workhouse	London General Omnibus Co., Ltd.	W. H. Ward, Esq., Paradise-street, Birmingham	Oct. 28
Timber and Leather Annual Contracts	Newcastle-on-Tyne Corp. Tyne Com.	Manager, Company's Coach Factory, 235, Upper-st., Islington, N.	Oct. 30
Concrete Car Sheds at Wingrove	Borough of Lewisham	General Manager & Engineer, Manors Power Station, Newcastle	Oct. 31
Underground Sanitary Conveniences Catford & Lee Green	U.D.C. Cannock	Surveyor's Department, Town Hall, Catford	Nov. 4
Two Short Outfall Sewers, Tanks, Engine, &c.	Worcestershire County Council	C. E. Walker, 25, Victoria-street, Westminster	do.
New Lunatic Asylum, near Bromsgrove	Sale U.D.C.	Clerk to Visiting Committee, Shirehall, Worcester	Nov. 15
Electricity Buildings		C. Hopkinson, Civil Engineer, 29, Princess-street, Manchester	No date
Drainage, Raby Park, Wetherby	Messrs. Baker & Wright	A. A. Gibson, Architect, Prospect Crescent, Harrogate	do.
Schools, West Jesmond, Newcastle	Messrs. Dexter & Sons, Ltd.	W. H. Knowles, Architect, 37, Grainger-street, Newcastle	do.
Rebuilding Business Premises, Academy-street	Directors of General Estates Co. Ltd.	A. Hill, Architect, 22, George's-street, Cork	do.
Works and Offices, Queen's-road, Nottingham		F. Ball, Architect, 23, King-street, Nottingham	do.
Bridge Works, Rhyl, North Wales		The Secretary, 13, Hanger-lane, Ealing, W.	do.
Sewer, Fulcrase-street, Barnstaple		Borough Surveyor, Barnstaple	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Required.	Salary.	Application to be in
*Surveyor	East Grinstead R.D.C.	100*l.*	Oct. 13

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. iv. Contracts, pp. iv vi. viii & x. Public Appointments xxi.*

PRICES CURRENT (*Continued*).

WOOD.

	At per standard. £ s. d.	£ s. d.
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 10 0	20 0 0
American Whitewood Planks— Per ft. cube	0 4 0	- - -
	Per square.	
Prepared Flooring— 1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 1 6
1 in. by 7 in. white, planed and shot	0 11 6	0 13 6
1 in. by 7 in. white, planed and matched	0 12 0	0 14 0
1¼ in. by 7 in. white, planed and matched	0 14 6	0 16 6
⅝ in. by 7 inch yellow matched and beaded or V-jointed boards	0 11 0	0 13 6
1 in. by 7 in. do. do. do.	0 14 0	0 18 0
⅝ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6-in. at 6d. to 9d. per square less than 7-in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders " "	8 2 6	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6	8 17 6
Flitch Plates	8 5 0	8 15 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 2 6	8 5 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 15 0	8 5 0
Staffordshire Crown Bars, good merchant quality	8 5 0	8 15 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 10 0
" " galvanised	16 0 0	- - -

(* And upwards, according to size and gauge.)

Sheet Iron, Black.—					
Ordinary sizes to 20 g.	10	0	0	-	- -
" " to 24 g.	11	0	0	-	- -
" " to 26 g.	12	10	0	-	- -
Sheet Iron, Galvanised, flat, ordinary quality—					
Ordinary sizes 6 ft. by 2 ft. to 3 ft. by 20 g.	12	15	0	-	- -
" " 22 g. and 24 g.	13	5	0	-	- -
" " 26 g.	14	5	0	-	- -
Sheet Iron, Galvanised, flat, best quality:—					
Ordinary sizes to 20 g.	16	0	0	-	- -
" " 22 g. and 24 g.	16	10	0	-	- -
" " 26 g.	18	0	0	-	- -
Galvanised Corrugated Sheets:—					
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12	15	0	-	- -
" " 22 g. and 24 g.	13	5	0	-	- -
" " 26 g.	14	5	0	-	- -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12	0	0	-	- -
" " 22 g. and 24 g.	13	0	0	-	- -
" " 26 g.	14	5	0	-	- -
Cut nails, 3 in. to 6 in.	9	5	0	9	15 0

(Under 3 in. usual trade extras.)

LEAD, &c.

	Per ton in London. £ s. d.	£ s. d
LEAD—Sheet, English, 3 lbs. & up.	13 10 0	- - -
Pipe in coils	14 0 0	- - -
Soil Pipe	16 10 0	- - -
Compo Pipe	16 10 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	25 0 0	- - -
Silesian	24 10 0	- - -
COPPER—		
Strong Sheet per lb	0 0 10	- - -
Thin "	0 0 11	- - -
Copper nails "	0 0 11	- - -
BRASS—		
Strong Sheet "	0 0 9	- - -
Thin "	0 0 10	- - -
TIN—English Ingots "	0 1 3½	- - -
SOLDER—Plumbers' "	0 0 6½	- - -
Tinmen's "	0 0 8½	- - -
Pewpipe "	0 0 9½	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3½d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3¼d. " "
32 oz. thirds	5d. " "
" fourths	4¼d. " "
Fluted sheet, 15 oz.	3d. " "
" 21 "	4d. " "
½ Hartley's Rolled Plate	1¾d. " "
⅝ " " "	2d. " "
¾ " " "	2¼d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes or barrels	per gallon	0 2 6
" " " in drums	"	0 2 9
Boiled " " in pipes or barrels	"	0 2 8
" " " in drums	"	0 2 11
Turpentine, in barrels	"	0 2 11
" in drums	"	0 3 1
Genuine Ground English White Lead	per ton	21 0 0
Red Lead, Dry	"	20 0 0
Best Linseed Oil Putty	per cwt.	0 2 6
Stockholm Tar	per barrel	1 12 0

PRICES CURRENT (*Continued*).

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 6
Superfine Hard-drying Oak, for Seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Superfine Pale Copal Body	1 4 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

W. G. Y. (Below our limit.)

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is undesirable, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BARKING.—For new front and decorations at The Harrow, Ripple-road, Barking. Mr. J. M. H. Gladwell, architect, "Kingsdown," Fillebrook-road, Leytonstone, N.E.:—

J. Smith	£162 5 0
J. & H. Cocks, Ltd.*	219 10 6

BURTON-UPON-TRENT.—For the erection of Turkish-bath buildings, for the Corporation. Mr. Geo. T. Lynam, Borough Engineer, Town Hall, Burton. Quantities by Borough Surveyor:—

G. Hodges, contractor, Burton-on-Trent*	£2,490

CARDENDEN (Fife).—For the erection of school buildings, house, &c., Auchterderran, for the School Board. Mr. Wm. Williamson, architect, 220, High-street, Kirkcaldy:—

Excavating, Masonry, and Brickwork.—R. McRobbie, Crieff*	£3,951 8 4
Carpentry and Joinery.—J. Munro, Cluny Bridge, Fife*	2,185 14 4
Iron and Smith Work.—Thomson Bros. High-street, Kirkcaldy*	448 6 9
Glazing.—J. Haxton & Co., High-street, Kirkcaldy*	64 0 4
Plumbing.—J. L. Arnott, 204, Bath-street, Glasgow*	441 15 11
Plastering and Cement Work.—J. Grant, Alloa*	446 11 7
Slating.—W. Stewart & Sons, Crossgates, Fife*	574 14 0
Tiling.—Wilson & Wood, 229, St. Vincent-street, Glasgow*	125 17 0
Heating Engineers.—Meikle & Philip, Edinburgh*	287 0 0
Ventilating Engineers.—R. Boyle & Sons, 110, Bothwell-street, Glasgow*	82 15 0

CWMCARN (Mon.).—For additions, &c., to schools, for the Mynyddislwyn School Board. Mr. R. L. Roberts, architect, Abercarn. Quantities by architect:—

Linton & Co.	£837 0	Richards, Ltd.	£795 0
C. F. Morgan	825 0	Davies Bros., Abercarn*	780 14
J. Jenkins	799 10		

DUKINFIELD.—For the erection of bank and post-office premises, for Parr's Bank, Ltd. Messrs. John Eaton, Sons, & Cantrell, architects. Stamford-street, Ashton-under-Lyne:—

J. Robinson, Ashton-under-Lyne*	£2,898

GATESHEAD.—For the completion of offices, Swinburne-street. Mr. J. Bower, Borough Surveyor, Town Hall, Gateshead. Quantities by Surveyor:—

Atkin, Burrell, & Co.	£1,275	Woodall & Co.	£1,148
J. C. Hope	1,264	H. B. Arkless	1,133
Ross & Son	1,230	Hunting & George	1,122
Nicholls & Co.	1,165	George Bain, Dunston-on-Tyne*	1,097

GRIMSBY.—For sewering and making good Pasture-street continuation and Sixhills-street continuation. Mr. H. Gilbert Whyatt, Borough Engineer:—

	Pasture-street.	Sixhills-street.
T. R. Waterman	£475 0 0	£243 0 0
G. W. Brown	473 18 2	239 18 0
Gilbert & Kirton	470 0 0	245 12 2
Howins & Goodhand	440 15 0	230 0 0
H. Good	439 13 9	227 5 7
W. H. Smith, Grimsby	397 10 0*	217 18 6*
Brunton & Son	284 8 9	610 9 6

KEIGHLEY.—For additions to Holme Mill. Messrs. John Haggas & Sons, architects, North-street, Keighley:—

Masonry and Joinery.—H. V. Robinson, Keighley *Slating.*—Nelson & Son, Keighley & Bradford *Plastering, &c.*—Hiram Emmott, Keighley *Plumbing, &c.*—T. Woodfine, Keighley	£1,470

KELTY (N.B.).—For additions to school buildings, Beath, for the School Board. Mr. John Houston, architect, Dunfermline:—

Builder.—Benjamin Symon, Milnathort	£1,221 7 5
Joiner.—Thomas Rutherford, Maryburgh, Blairadam	559 13 8
Plasterer.—Joseph Tough, Kelty	134 8 5½
Plumbers.—Relland & Co., High-street, Dunfermline	95 10 0
Slater.—Charles Nisbet, Kelty	75 10 1½
Painters.—P. & J. Gordon, Middlefield, Leith Walk, Edinburgh	39 13 10½

LONDON.—For business premises, High-street, Bromley, Kent. Messrs. Wadmore, Wadmore, and Mallett, architects, 8, Bream's-buildings, Chancery-lane, E.C. Quantities by Mr. W. J. Pamphilon, 21, Finsbury-pavement, E.C.:—

Lyme & Duncan	£8,867	R. A. Lowe	£7,640
Larke & Sons	8,540	Arnaud & Son	7,577
D. Payne	8,090	T. D. Graly	7,489
Bulled & Co.	7,831	F. P. Duthoit, Bromley*	7,416
T. Graham	7,700	F. W. Green	7,231
Crossley & Son	7,674		

LONDON.—For repairs and alterations at the Cambridge Music Hall, Commercial-road, E. Mr. J. M. H. Gladwell, architect, "Kingsdown," Fillebrook-road, Leytonstone, N.E.:—

J. & H. Cocks, Ltd.	£325	H. Bishop	£278
A. Webb	289	J. De Jong & Co.*	251
Campbell, Smith, & Co., Ltd.	279		

For Repairing and Upholstering.

Maple & Co. (carpets)	£165 3 4	A. Lazarous	£148 0 0
		Maple & Co.*	117 8 11

LONDON.—For the reconstruction of the railway bridges in New Cross-road and London-street, Greenwich, for the London County Council (in connexion with electrification of tramways):—

Meredith & Co.	£10,540 2 8	Mowlem & Co.*	£8,162 0 0
Westwood & Co.	9,105 11 0		

LONDON.—For renewing the wood paving of Vauxhall temporary bridge, for the London County Council:—

Mowlem & Co.	£946 0 0	Griffiths & Co.*	£706 13 4
Acme Wood Paving Co.	820 0 0	E. Alcott (informal)	700 0 0

LONDON.—The provision and location of a street fire station on the site of the permanent Kilburn sub-station in Maida Vale, for the London County Council:—

J. McManus	£374	Humphreys, Ltd.	£265
R. S. Buckeridge	315	W. Harbrow*	248
G. Neal	266		

LONDON.—A street fire station at South Audley-street, for the London County Council:—

R. S. Buckeridge	£275	Humphreys, Ltd.	£234
G. Neal	236	W. Harbrow*	200

LONDON.—Fuel-economisers for Greenwich electricity generating station, for the London County Council:—

The Clay Cross Co.	£4,300 0	A. Lowcock, Ltd.	£4,053 0
Goodbrand & Co.	4,286 10	Green & Son, Ltd., Manchester*	4,042 0
Roberts Bros.	4,165 0		

LONDON.—For alterations to the Parker-street lodging-house, for the London County Council:—

F. & H. F. Higgs	£4,040 0 0
Holloway Bros.	3,795 0 0
Prestige & Co.	3,687 0 0
Stimpson & Co.	3,530 0 0
B. E. Nightingale*	3,494 11 6

[The architect's estimate amounted to £3,905.]

[*See also next page*

LONDON.—For Durham Buildings, York-road, Battersea (York-road and Garratt-lane and Merton-road rehousing), for the London County Council :—

Holloway Bros.	£24,872	Smith & Son	£24,000
J. Carmichael	24,653	Spencer, Santo, & Co.	23,750
Holliday & Greenwood	24,444	Stimpson & Co.	23,400
B. E. Nightingale	24,000	F. & H. F. Higgs*	23,000

[The architect's estimate amounted to £25,400. Messrs. Holloway Bros.' tender was expressed to be subject to a modification of clause xii. of the form of contract, which provides that all plant, &c., brought on site of the works shall become the property of the Council.]

LONDON.—For repairs to s.s. *Belvedere*, for the London County Council :—

The Thames Ironworks and Shipbuilding Co., Ltd.	£3,114 0 0
Brown's Dry Dock and Engineering Co., Ltd.	2,683 14 0
Mills & Knight	2,070 0 6
The London Graving Dock Co.	2,068 19 6
Fletcher, Son, & Fearnall*	2,035 0 0

LONDON.—For repairs to the launch *Beatrice*, for the London County Council :—

The Thames Ironworks and Shipbuilding Co., Ltd.	£525
Vickers, Son, & Maxim, Ltd.	480
Fraser & Son*	318

MANOR PARK.—For erection of stabling at The Rabbits Lodge. Mr. J. M. H. Gladwell, architect, "Kingsdown," Fillebrook-road, Leytonstone, N.E. :—

J. & H. Cocks, Ltd.	£363 0
H. Bishop	331 0
Evans Jones & Co.*	249 12

PORT TALBOT (Wales).—For the erection of curate's house, Bryn, for Miss Talbot. Mr. F. B. Smith, C.E., Port Talbot :—

Humphrey & Co.	£947	C. & F. Gaen, Port Talbot*	£819
Catley & Co.	908		

RHYMNEY (Mon.).—For the erection of a cottage hospital for the committee. Messrs. Llewellin, Smith, & Davies, architects, Aberdare :—

Davies & Francis	£2,605 0	T. Jones	£2,445 11
E. Gronow	2,496 0	Williams & Sons, New Tredegar, Mon.*	2,285 15
J. Morgan	2,452 c		
T. F. Howells	2,446 0		

SALTASH.—For proposed construction of roads and sewers on the Barn Park Estate, for Mr. J. Bennett. Mr. Edgar M. Leest, architect and surveyor :—

J. Willcocks	£560 0 0	J. Shaddock	£389 8 8
A. J. Richards	453 0 0	Jefford & Son	367 8 1
W. H. Rothery	420 0 0		

SIDMOUTH (Devon).—For the erection of an hotel for the Hotel Co., Ltd. Mr. R. W. Sampson, architect, Manor Offices, Sidmouth. Quantities by Mr. R. E. Crossland, 29, Ludgate-hill, E.C. :—

Tucker & Sons	£25,500	Bovey & Son	£22,800
Stevens & Barston, Ltd.	24,949	Grainger	22,689
Skinner & Luxton	23,887	Woodman & Son	22,400
Richards	23,158	Stevens & Sons, Ltd.	22,147
Dart	23,000	Blake, Plymouth*	20,362

STRETFORD.—For the erection of generation station, for the Stretford Urban District Council. Mr. Ernest Woodhouse, architect, 88, Mosley-street, Manchester :—

Crossley & Sons, Ltd.	£966 18 6
Trustees of S. E. Clarke	965 10 0
H. R. Bowers	918 13 8
Hathern Station Co.	916 6 7
Coalville, Sandford, & Co.	913 0 0
Doulton & Co., Ltd.	850 0 0
The Burmantofts Works	822 5 0
Gibbs & Canning, Ltd.	800 10 0
Jabez Thompson	765 0 0
Stephenson & Son, Ltd.	760 10 0
J. C. Edwards	755 8 6
Whitwick Colliery Co.	731 3 6
The Bispham Hall Co.	708 10 6
J. J. Lee	695 0 0
The Staffordshire Brick and Terra Cotta Co., Hednesford*	550 0 0

SUTTON (near Hull).—For the construction of water-supply works, &c., Wyton-road, for the Sculcoates Rural District Council. Mr. Wm. H. Wellsted, engineer, Prince's Dock Chambers, Hull :—

T. C. Starkey	£483 14 0	R. Fisher	£395 4 0
F. Oldfield	441 13 3	T. Bell	393 0 0
Boyce, Bradley, & Co	434 11 0	H. Medforth	369 0 0
W. L. Harrison	409 0 0	J. Robinson, Hull*	368 10 0
C. Barnard	396 15 0		

WOLVERHAMPTON.—For the Wolverhampton and District Hospital for Women, Chapel Ash :—

H. Lovatt	£12,787	G. Cave	£11,800
H. & S. Ham	12,740	Midland Building Co.	11,775
Lowe & Son	12,536	F. Herbert	11,685
P. Bowater	12,533	H. Willcock	11,505
Speke & Son	12,067	H. Gough*	11,400
Lindsay Jones	11,850		

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